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GRIST

U.S. DEPARTMENT OF THE INTERIOR
Heritage Conservation and Recreation Service

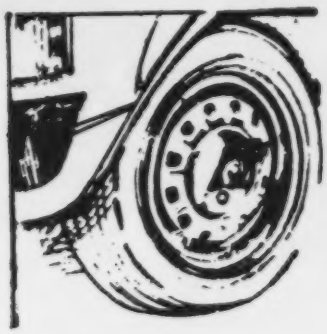
May/June 1980

Volume 24/Number 3

Gas-Saving Facts

The following gas-saving tips, published as a public service by Curtis Chevrolet in Washington, DC, should be helpful to park and recreation areas that are trying to conserve energy during these times of soaring prices and dwindling supply.

Keep your tires properly inflated. Correct tire pressure is a must for maximum mileage, yet it is often overlooked by drivers. Underinflation increases your tires' rolling resistance and, as a result, lowers your gas mileage. So check your tire pressure frequently.



Have wheels properly aligned. Improper front-end wheel alignment also wastes gas by creating additional rolling resistance. Check your tires regularly for uneven wear, which usually indicates poor alignment.

Drive at a moderate speed. One of the easiest ways to conserve gasoline is to stay within the prescribed speed limits. Excessive speed wastes fuel. For example, most cars will lose about 20 percent in gas mileage driving at 70 miles (112 km) per hour rather than the legal highway speed limit of 55 miles (88 km) per hour. So slow down . . . and save.

Slow down in the wind. Driving in cross- and head-winds also results in fuel economy loss. To offset some of its effects, slow down when driving under these conditions.

An imaginary egg can save gas. Imagine that there is an egg between your foot and the accelerator pedal. This will help you to accelerate smoothly and avoid gas-guzzling jackrabbit starts.

Angry drivers waste gas. Driving when you're upset or angry usually causes you to accelerate and brake harder and faster, which results in lower gas mileage. So calm down before you drive.

Keep your car in tune. Always look for changes in your car's usual behavior. If it suddenly becomes hard to start, loses power, hesitates, idles roughly, or stalls, chances are you are losing mileage. An untuned car can be a gas waster.

Pace your driving. Be aware of traffic situations developing ahead of you, so you react efficiently and safely. For example, anticipating stops in advance allows you to slow down gradually—an excellent gas-saving practice. Also, traffic lights usually are timed according to prescribed speed limits. So driving at the correct speed may allow you to "make" all the green lights which saves gas and reduces engine and tire wear too.

Maintain a steady speed. Once you've reached your desired speed, keep it constant. Frequent acceleration and braking reduce your car's efficiency.

Avoid prolonged idling. Whenever you expect to wait more than a minute or two, turn off your engine. Restarting will use less gas than idling. It's also more efficient to let your car warm up by driving it slowly than by letting it run in your driveway. Remember: An idling car gets zero miles per gallon!

(continued on p. 19)

Recycling

GRIST

A publication of the Park Practice Program The Park Practice Program is a cooperative effort of the Heritage Conservation and Recreation Service and the National Recreation and Park Association.

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The Park Practice Program began in 1956 as the result of an agreement between the National Conference of State Parks and the National Park Service, with NPS serving as the primary sponsor until 1979. The program includes: *Trends*, a quarterly publication on topics of general interest in park and recreation management and programming; *Grist*, a bimonthly publication on practical solutions to everyday problems in park and recreation operations; and *Design*, a quarterly compendium of plans for park and recreation structures which demonstrate quality design and intelligent use of materials.

Membership in the Park Practice Program includes a subscription to all three publications and selected back issues in vinyl binders with indices and all publications for the calendar year.

The initial membership is $80; annual renewal is $20. A separate subscription to *Grist* is $15 initially, and $7.50 on renewal. Subscription applications and fees, and membership inquiries should be sent *only* to: National Recreation and Park Association, 1601 N. Kent Street, Arlington, Va. 22209.

The information presented in any of the publications of the Park Practice Program does not reflect an endorsement by the agencies sponsoring the program or the editors.

Articles, suggestions, ideas and comments are invited and should be sent to the Park Practice Program, U.S. Department of the Interior, Heritage Conservation and Recreation Service, Division of Park and Recreation Technical Services, Washington, D.C. 20243.

FOR SAFETY'S SAKE

All ideas and suggestions shared in the pages of *GRIST* are presented as guidelines, not final working blueprints. Be sure to check any device or plan you want to adapt for compliance with national, state and local safety codes.

Recycle Old Golf Carts Into Handy Litter Carts

When a new litter control program was started by the Mendocino County (CA) Department of Parks and Beaches, Lead Worker Dave Mathews soon discovered the need for an easy way to collect litter along roadways.

He went to a small junk yard and bought up all the old golf carts available. From these he built several carts to be used by litter control workers.

Basically, the cart has a loop through which a plastic bag is placed, attached to the cart by a large piece of rubber cut from innertubes. A wire mesh basket holds aluminum and other recyclable materials separate from the rest of the trash. A small platform was welded to fit below the plastic bag to prevent it from tearing as it is filled.

All fabrication was inhouse, using simple welding techniques, and cost was kept to a minimum. Mathews has found that far more trash can be collected with a lot less strain using this cart.

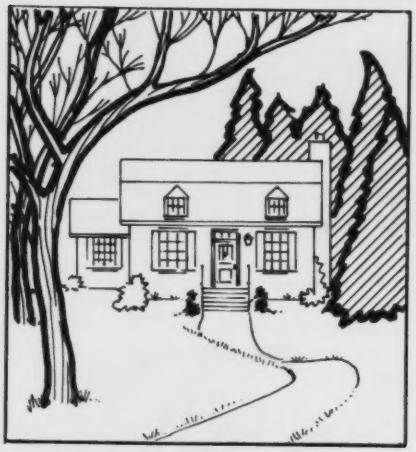
Our thanks to Director Arthur Kramer for sharing Mr. Mathews' idea with *GRIST* readers.

Energy Saving

Help Save Energy—Plant a Tree

It may be more energy-wise to plant a tree than to add a few inches of insulation, claims a director of the American Society of Home Inspectors in a recent *Conservation News*. The National Wildlife Federation publication reported that studies in the northeastern United States have found that strategically locating shade trees can cut home heating costs $12 to $106 a year, and cooling costs as much as $50.

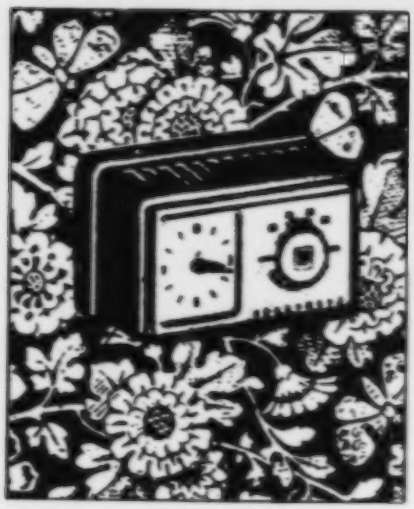
Siting a large-leaved deciduous tree on the south-southwestern side of your



home can equal a half ton (.45 t) of air conditioning capacity, allowing you to get by with a smaller cooling system and less operating time. Plant evergreens on the north side of your property for effective windbreaks. While species with year-round foliage help out with cooling summer shade, they also block solar gain during the winter.

Obviously, park and recreation buildings would enjoy similar energy-saving benefits through properly sited trees. So do your part to cut America's energy use; save money; and get beauty, shade, and increased property value—plant a tree!

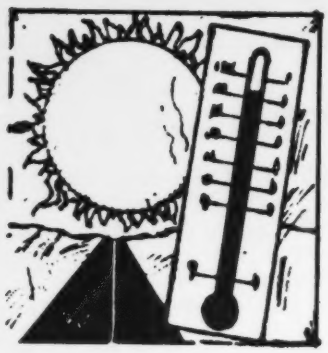
Set Back Your Thermostats When Park Buildings Are Not In Use



Peter R. Amodei, air conditioning equipment mechanic at Independence National Historical Park (PA), reminds us of an old and obvious way to cut energy use, but one that apparently has not been implemented yet in many park and recreation facilities. Install thermostats with timers in all of your buildings. Instead of keeping the temperature constant in these facilities, set the "night back" thermostat to a lower temperature during the night and other times the buildings are not being used.

Gas-Saving Facts (continued from p. 17)

On hot days, park in shaded areas. When you get back in your car, it won't be as hot. As a result, you may not need to use your air conditioner as much, or at all. When your car is already hot, open your windows first to let out the hot air, then turn on your air conditioner.



Follow this procedure when starting a cold engine. Press your gas pedal to the floor once before starting your engine. This will engage the automatic choke and should be sufficient to start your engine. If your car requires excessive pumping before starting, it could be a sign that your choke needs adjusting.

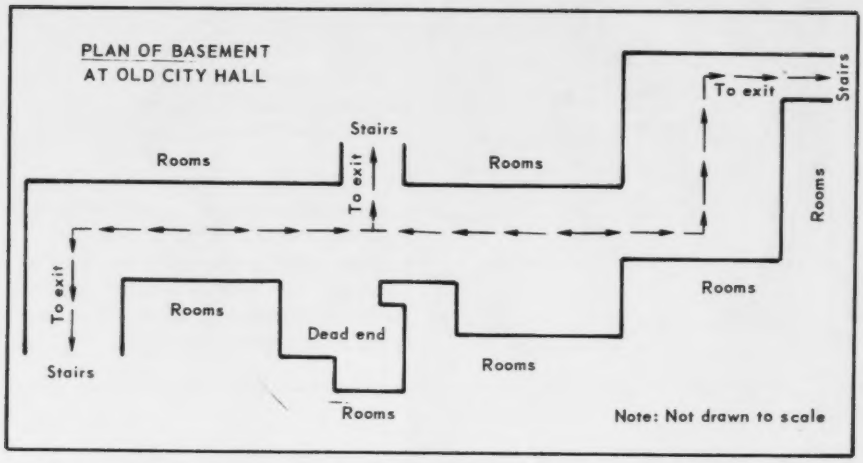
An efficient cornering technique. Slow down. Whenever you turn on urban and suburban streets, rolling resistance increases. As a result, gas consumption also increases. By backing off the accelerator a bit, you'll save gas by reducing the negative effects of curves and turns.

Use your radio to save gas. Many radio stations give daily reports on traffic conditions during rush hours. Make it a point to listen to them so you can avoid long, gas-wasting jam ups and hassles by taking an alternate route.

Team up. Car-pooling is one of the best ways to cut down on your gas consumption. If you share the ride with just one person, you could save up to 50 percent or more on your gas bills!

Safety

Paint a Floor Line to Basement Exits



This fire safety measure, suggested by Constantine J. Dillon, park technician at Independence National Historical Park (PA), could be adapted to almost any building with long or confusing corridors.

Under Independence Square, between Old City Hall and Independence Hall, there is a tunnel filled with equipment, storage rooms, and various offices. The layout is quite confusing and exits are very difficult to find, especially in the dark or if one is unfamiliar with the area.

In the case of fire, Mr. Dillon realized, it would be almost impossible for people to find the exits, crawling along the floor of the smoke-filled corridor. Mr. Dillon proposed painting a line or series of arrows on the floor, directing people to the basement exits. For greater visibility, the lines should be painted with luminescent paint.

This simple precautionary measure might save many lives in the event of fire.

Grid Maps for Patrols and Crew Activities

A large-scale map of the immediate area often can increase the safety and efficiency of personnel involved in such park activities as search and rescue, fire suppression, VIP security, and special patrols.

Keith R. Langdon, park technician at Shenandoah National Park (VA), suggests a way of making such maps available to all field team and crew members. First, acquire several grid coordinate transparencies, approximately 8" × 10" (20–25 cm), with letters on one margin, numbers on the other, and thin grid lines. Lay the transparencies over selected portions of a United States Geological Survey topographical map (or any other). Then xerox as many copies as needed.

The grid coordinates allow personnel to report accurate locations to supervisors, even if they are from another park or agency and unfamiliar with the area. By using the grid coordinates exclusively to note locations, a high degree of security is possible for such events as VIP visits or poaching patrols/stakeouts, where radio traffic may be monitored. During large fires or search and rescue operations, each grid square can be used to estimate area covered.

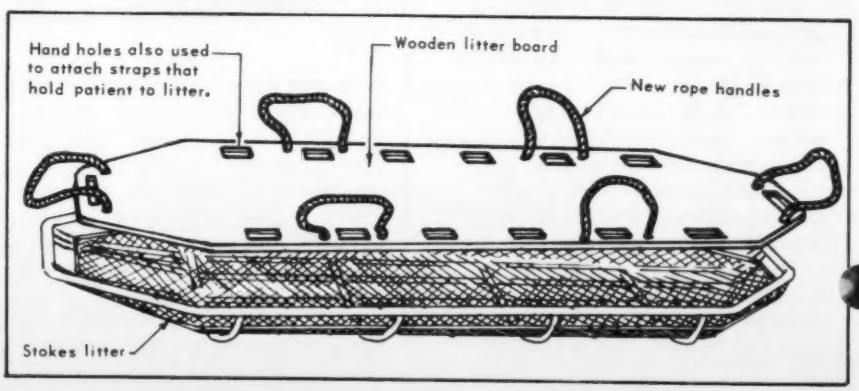
The transparencies also can be labelled with a felt tip pen to identify important points, then erased with an alcohol solution, preventing permanent defacement of reference maps.

Modified Handles for Stokes Litter Backboard

To help prevent further injury to accident victims, Norman Trout, park technician at Shenandoah National Park (VA), devised this simple modification to the backboard used in a stokes litter.

Wooden backboards frequently are used to support victims suffering back or neck injuries. When such accidents occur in the backcountry, this backboard must fit into the stokes litter for transport over rough terrain. Handles for lifting and carrying generally are cut out of the sides of the backboard. This makes it difficult to lower the backboard and patient into the stokes litter smoothly because the rescue workers' fingers get pinched and caught under the board.

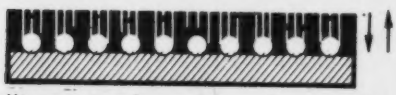
Trout solved this problem by constructing a new backboard. Instead of cutting handles into the sides of the board he drilled holes along the sides and threaded nylon rope through the holes, making rope handles. The rope handles allow the patient to be lowered smoothly into the stokes litter and help protect the rescue workers' fingers.



Emergency Warning Banner

Park and recreation workers should be aware of LifeSaver, a new 9-foot (2.7m) square emergency warning banner.

LifeSaver contains the internationally-recognized directional arrow pattern, brilliantly emblazoned on the Tyvek banner in federally approved Day-Glo Fluorescent Blaze Orange, outlined in black and highly reflective Cataphote Silver-Alert ink. These elements cover



Microscopic spheres give true focused light rays that return directly to the source.

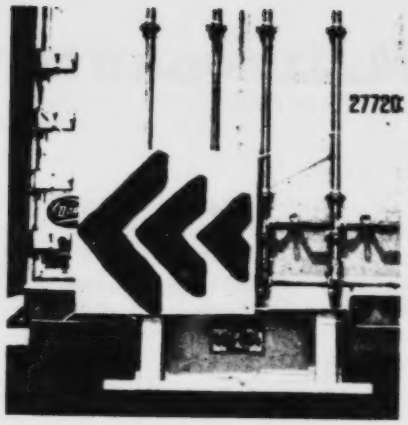
the ultra-violet light spectrum (natural light) as well as the red light spectrum of headlights and other man-made lighting. Thus, LifeSaver is visible day and night in any weather, for long distances.

The LifeSaver attaches to the rear of any disabled vehicle or convenient object in seconds. It alerts onrushing traffic, giving clear, instant direction, avoiding a disastrous accident. It also aids search and rescue and is extremely effective in disaster and traffic management.

When not in use, the reusable banner folds into a tidy, resealable plastic packet for convenient storage in a glove compartment or trunk. LifeSaver fits vehicles of all sizes and requires no batteries, electrical hook-ups, or pyrotechnics.

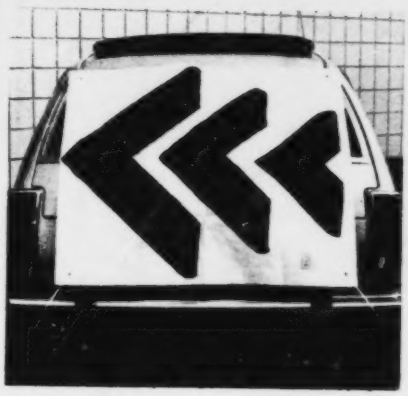
The Federal Occupational Safety and Health Administration (OSHA) has recognized LifeSaver as "the single most outstanding contribution in the field of safety," calling it a "simple, inexpensive, safe and reliable product which is a significant contribution in the prevention of rear-end collisions."

Inexpensive and reusable for years, the reflective emergency LifeSaver can give your park and recreation vehicles increased road hazard protection. For more detailed information and price, contact the Government Sales Division of LifeSaver Industries, Inc., 2000 Connecticut Avenue, NW, Washington, DC 20008 or phone (202) 265-0246.

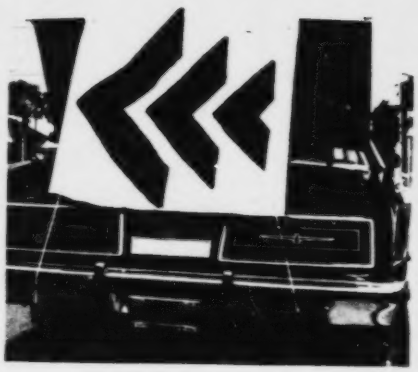


Use the banner on a truck, . . .

a mobile home, . . .



a station wagon, . . .



or an auto.

Library of Congress Selects Park Book for Prototype Voice-Indexed Cassette

The Library of Congress has selected a National Park Service publication—*Access National Parks: A Guide for Handicapped Visitors*—as its first voice-indexed cassette presentation.

Immediately upon it publication in 1978, the book was selected by the Library of Congress for production in both braille and talking-book editions by the Library's National Library Services for the Blind and Physically Handicapped (NLS/BPH). The historic tape is the talking-book edition of the publication which details accessible facilities, services, and programs in all parks and monuments within the National Park System.

The "Access" tape will be a prototype for voice-indexed cassettes and will be used to test reader reaction concerning ease of use, spacing from index word to explanation, and other possible difficulties.

Voice indexing uses words, in this case the names of parks, to help readers locate specific information. Index words are audible when the cassette is played in a fast-forward mode. The reader then stops the tape and resumes play at regular speed to hear the full entry under that heading.

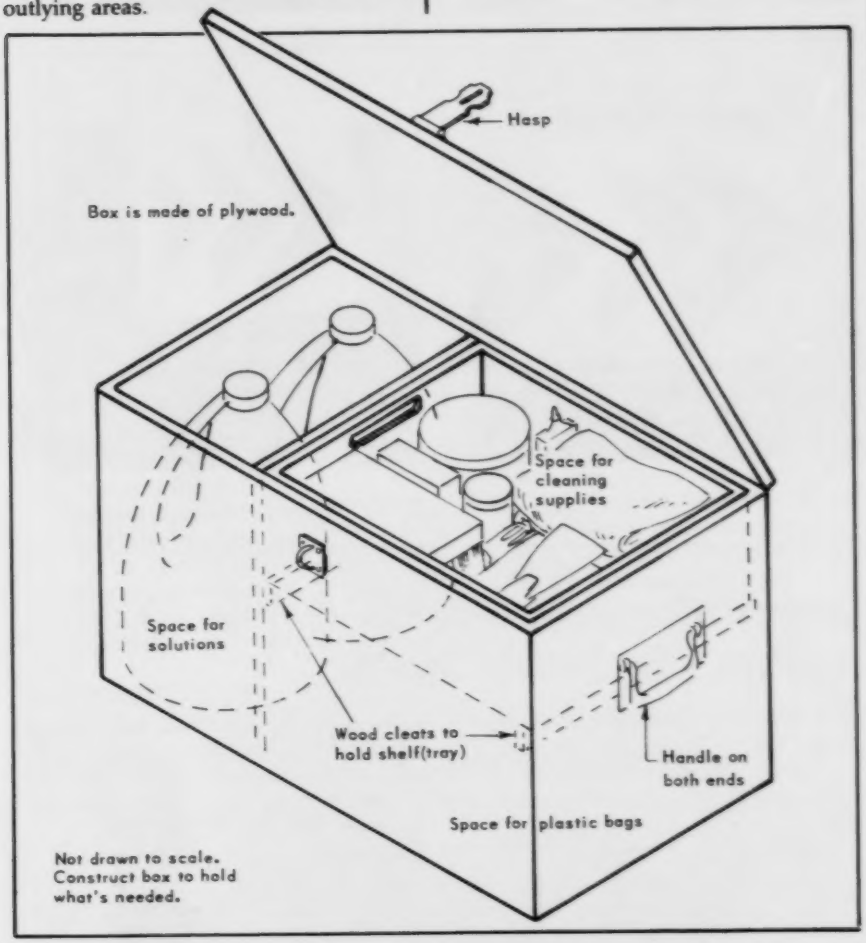
NLS/BPH has developed an automatic machine for producing indexed cassettes that is fast, efficient, and cost effective. The machine rapidly blends two tapes that are narrated individually. One tape contains the text and a tone indicating when index words are required. The other tape contains the index words. The machine eliminates tones and superimposes index words over the text from twelve to twenty-six times the text speed. Record-speed variation compensates for the variation of speed from the beginning to the end of a tape in fast-forward mode. The result is a normally pitched voice in all parts of the indexing.

Maintenance

Cleaning Supplies Storage Box

Mary Jo Danaher, a laborer at Death Valley National Monument (CA, NV), shares a good idea for facilitating the maintenance of restrooms and privies in outlying areas.

Ms. Danaher suggests building this storage box for cleaning supplies, and mounting it onto a truck near the cab. Complete with shelf, handles, and hinged top, the box keeps supplies neat and orderly, protects them, and makes them easier to transport.


Hasp
Box is made of plywood.
Space for cleaning supplies
Space for solutions
Wood cleats to hold shelf(tray)
Handle on both ends
Space for plastic bags
Not drawn to scale. Construct box to hold what's needed.

Pop–Top Stacker

Don Black, retired chief interpreter at Joshua Tree National Monument (CA), invented a handy little device which other park and recreation areas might find useful. He modified a coat hanger into a "pop top" stacker. With this clever device a person can pick up hundreds of unsightly pop tops and avoid ending up with an aching back.

At Joshua Tree, mild rivalries developed among interpreters on roving patrol to see who could pick up the most tops. Mr. Black's office soon lined with hundreds of itinerant pop tops, which were donated to a person who was saving them for a dialysis machine.

Through use of this simple invention, visitor contacts soared. The idea caught on and campgrounds miraculously grew cleaner. One boy even returns each year to ceremoniously present his accumulated pop tops to the interpreter who introduced the idea to him.

Durable Toilet Partitions

D.A. MacEachern, superintendent of Point Pelee National Park in Ontario, Canada, highly recommends a new type of material for toilet partitions. The material—Solid Laminated Plastic with Formica Finish—comes in a variety of colors, polished or suede, and can take an extensive amount of punishment and abuse without being marred or cracked.

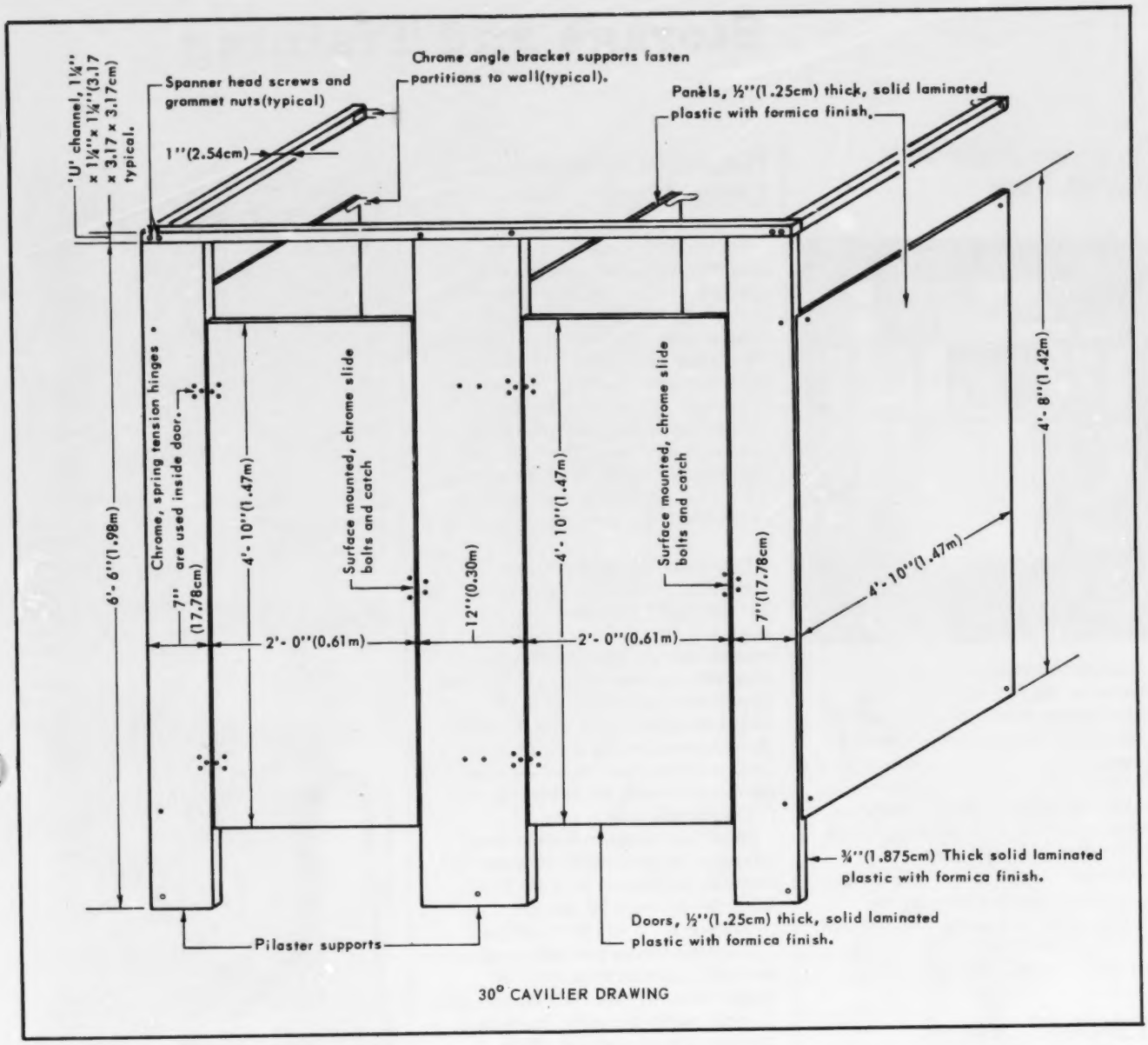
The park had found that the old standard metal partitions structurally were unable to withstand much abuse without leaving permanent disfigurations. After a few years, they also had a tendency to rust, particularly in unheated buildings. When Visitor Services requested replacements, the General Works division suggested the new material. Now, after a year's service and frequent use, MacEachern reports, the new partitions look as good as they did the day they were installed.

Continues on next page

Information Needed on Water Recreation Fees

Resources for the Future, a nonprofit research organization, asks the aid of *GRIST* readers in obtaining information needed for a study of water pollution control benefits. The organization's goal is to produce believable benefit estimates for use in national policy making. To achieve this goal it needs to discover what people *actually pay* at fee fisheries, commercial beaches, canoe liveries, and private campgrounds on water.

The first need is to locate a large number of such places. If you work for one, know of one, or use one, please send its name and address or phone number to Clifford S. Russell, Resources for the Future, 1755 Massachusetts Avenue, NW, Washington, DC 20036. Any additional material, such as brochures, will be welcome.


'U' channel, 1¼" x 1¼" x 1¼" (3.17 x 3.17 x 3.17cm) typical.
Spanner head screws and grommet nuts (typical)
Chrome angle bracket supports fasten partitions to wall (typical).
Panels, ½" (1.25cm) thick, solid laminated plastic with formica finish.
1" (2.54cm)
Chrome, spring tension hinges are used inside door.
7" (17.78cm)
6'- 6" (1.98m)
4'- 10" (1.47m)
Surface mounted, chrome slide bolts and catch
12" (0.30m)
2'- 0" (0.61m)
2'- 0" (0.61m)
4'- 8" (1.42m)
4'- 10" (1.47m)
¾" (1.875cm) Thick solid laminated plastic with formica finish.
Doors, ½" (1.25cm) thick, solid laminated plastic with formica finish.
Pilaster supports

30° CAVILIER DRAWING

The laminated plastic material has a clean, modern, appealing appearance that MacEachern feels helps deter vandalism.

Use of this material does entail higher labor and material costs initially. Material cost per square foot (.09 m²) is $4.72 of ½" (1.25 cm) sheets and $5.71 for ¾" (1.875 cm) sheets; the additional labor cost is due to cutting and fitting. However, the initial installation cost is more than offset by less maintenance and vandalism.

The following special tools and tips are helpful when working with the solid laminated material:

1. Carbide tip general purpose Simonds blade, or its equivalent, for cutting sheets to size.

2. Carbide tip #3 flue drills should be used at a slow drill speed.

3. Holes should be planned and drilled prior to installation.

The workers found that if the material wasn't lying flat, it had a tendency to shatter to a minor degree at the opposite side of the hole being drilled.

Overall, MacEachern feels the advantages far outweigh the disadvantages, and urges other park and recreation areas to consider this new material, available from Cyanamid of Canada Ltd., in Montreal.

Storage and Training

Brochure Rack with Posted Map

Thomas Chalmers, equipment operator at Ole Bull State Park (PA), shares another useful idea with *GRIST*.

Modifying a standard brochure rack design, Chalmers left out a portion in the center large enough to contain a posted road map for visitor orientation. The cubicles then were made to fit each size brochure the park used.

Chalmers' design can be adapted to any situation, making more or less brochure space as needed. The enclosed map can be either a highway or park area map mounted under plexiglass.

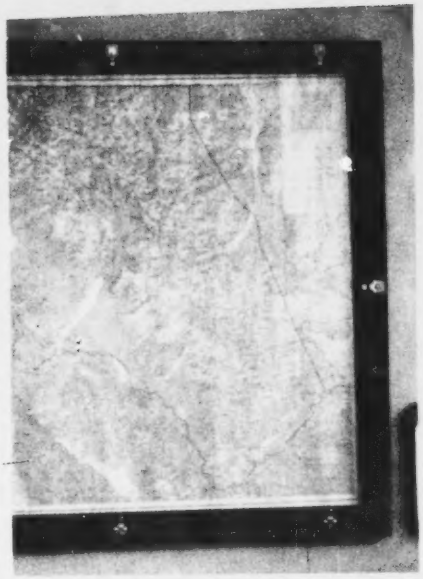
Reusable Frames For Office Maps

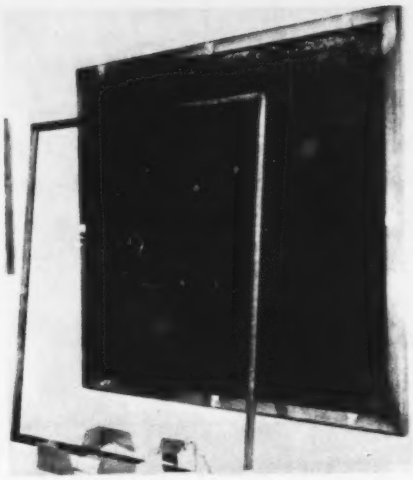
On the wall of just about every ranger or maintenance office, at least one large map of the park or recreation area can be found. Such maps are indispensable in planning and directing the management of the park. Usually these maps are thumb tacked or taped to the wall. When they must be replaced or moved, the tacks and/or tape leave ugly scars which must be plastered or painted. If a map must be moved for any reason, it is almost impossible to prevent some damage to it.

To remedy this problem, Lyle Strand, a carpenter at Glacier National Park (MT), suggests protecting both the maps and the office walls by using reusable frames. Strand's device is essentially a frame within a frame. The inner frame holds the map in place within the outer frame. Storm window clips mounted on the outer frame keep tension on the inner frame and map. To provide a smooth, stable backing, ⅛" (.3125 cm) masonite is used.

These frames can be built in about one hour. Approximately $8 worth of materials are needed for a 24" × 36" (50 × 90 cm) map; $10 for one measuring 38" × 42" (95 × 105 cm).

Using the frames prevents damage to the maps (topographical maps of Glacier National Park, for example, cost $2 each) and to the walls. In addition, the framed maps enhance office appearance.





Training Seasonal Employees

The training of seasonal park employees poses problems for many managers. The care and use of park equipment such as lawnmowers, chain saws, tractors, electric meters, axes, welders, even hammers must be thoroughly explained.

Thomas L Gregory, assistant superintendent at Seashore State Park in Virginia Beach (VA), shares one method of instruction that has worked for him.

Each seasonal employee must pick a tool and present a training session on that tool. The employee "instructor" is provided with any operating manuals or written material available on his or her topic and is assisted by permanent employees, when necessary, in preparing the session.

These sessions are held once a week. They last about half an hour and are attended by all available employees. Every session stresses safety to a certain extent—what safety equipment to use, the purpose and limitations of the tool, and proper care and maintenance of it, etc.

Through these sessions, employees have learned to use tools more efficiently and safely. The condition of the equipment also has been improved noticeably.

Photo by John Roderick, Jr.

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Occupational Hazards and Industrial Hygiene

by Connie Villar

Employees report becoming sick and nauseated while on the job. Other workers develop sores on their hands. Still others complain of burning eyes and throat.

Hazardous occupational exposures occurring in general industry you say. Not anymore. These incidents and more like them occur throughout our parks with increasing frequency.

Parks of today are complex operations and have become like miniature industrial factories and plants. Because of our nature-oriented work environment, there is a tendency to think that exposures to agents such as carbon monoxide, benzene, and asbestos, to name a few, remain strictly confined to industrial sites. However, employees in park and recreation areas increasingly are subjected to the same occupational hazards and diseases as their counterparts in industry.

These incidents indicate the need to generate a knowledgeable awareness of the occupational hazards in our work environment and to take aggressive actions toward abating those hazards. This awareness should be fostered at all employment levels. Workers not only need to know how to do the job, they also need to know the potential hazards associated with it.

Industrial occupational hazards generally can be associated with particular productions or jobs. For example, a cotton mill can be expected to have cotton dust problems which upon chronic exposure can produce a lung condition known as byssinosis. Welders are subject to various injurious gases and metal fumes. Control of these hazards in industry is facilitated because of their limited scope and more manageable work environment.

The personal sampling device being secured to employee will monitor samples and measure exposure to various industrial vapors. Bill Davis, NPS

This control problem is magnified in the parks because we have such diverse work environments (i.e., outdoors, indoors, temperature extremes, and regional differences) and types of jobs (i.e., chemists, carpenters, landscapers, mechanics, conservators, printers, etc.). It is no wonder that occupational exposures in our parks can run the entire gamut of hazards.

Chemical Stress

The greatest potential for occupational exposure comes from the use of chemicals. It is not only in a laboratory that employees are exposed to chemicals. Almost every job involves some contact with them. Mechanics use oils, degreasers, and gasoline; plumbers and carpenters work with adhesives, caulking compound, and acids; landscapers handle fertilizers and pesticides. Even office workers can be exposed to chemical stress. The use of chemicals in our maintenance and special production shops is common practice.

A large percentage of these chemicals falls into the organic solvent class. These are used as cleaning agents, drying agents, paint thinners, chemical reagents in the laboratories, and in pesticides and wood preservatives.

Solvents

A few of the more commonly used solvents are benzene, toluene, trichloroethylene, turpentine, and naptha. These agents can pose a potentially high health hazard if they are used incorrectly or without the proper controls and protections.

The best control method is to assure sufficient ventilation to dilute or carry away the solvent vapors before they

(continued on p. 29)

Safety and . . .

GRIST

A publication of the Park Practice Program The Park Practice Program is a cooperative effort of the Heritage Conservation and Recreation Service and the National Recreation and Park Association.

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Membership in the Park Practice Program includes a subscription to all three publications and selected back issues in vinyl binders with indices and all publications for the calendar year.

The initial membership is $80; annual renewal is $20. A separate subscription to *Grist* is $15 initially, and $7.50 on renewal. Subscription applications and fees, and membership inquiries should be sent *only* to: National Recreation and Park Association, 1601 N. Kent Street, Arlington, Va. 22209.

The information presented in any of the publications of the Park Practice Program does not reflect an endorsement by the agencies sponsoring the program or the editors.

Articles, suggestions, ideas and comments are invited and should be sent to the Park Practice Program, U.S. Department of the Interior, Heritage Conservation and Recreation Service, Division of Park and Recreation Technical Services, Washington, D.C. 20243.

FOR SAFETY'S SAKE

All ideas and suggestions shared in the pages of *GRIST* are presented as guidelines, not final working blueprints. Be sure to check any device or plan you want to adapt for compliance with national, state and local safety codes.

Emergency First Aid for Poison Victims

The National Naval Medical Center in Bethesda (MD) offers the following emergency first aid tips for treating victims of poisoning:

1. Small children most often are the victims of accidental poisoning. If a child has swallowed or is suspected of having swallowed any substance that might be poisonous, assume the worst and *take action.*

2. Call your local Poison Control Center. If there are none located nearby, call your emergency medical rescue squad. Bring the suspected item and container with you if you take the victim to a hospital.

3. If the victim is unconscious, make sure he or she is breathing. If not, tilt the head back and perform mouth-to-mouth breathing. Do not give anything by mouth. Do not attempt to stimulate the person. *Call the emergency rescue squad immediately.*

4. If the victim is vomiting, *roll him onto the left side* so he will not choke on what is brought up.

A drug overdose is a poisoning. Alcohol is as much a poison as stimulants, tranquilizers, narcotics, hallucinogens, or inhalants. Don't take drunkenness lightly. Too much alcohol can kill.

1. Call for emergency help at once.

2. Check the victim's breathing and pulse. If breathing has stopped or is very weak, give rescue breathing. Caution: reviving victims of alcohol poisoning can be violent; they can harm themselves and others. So be careful.

3. While waiting for help: watch breathing; cover the person with a blanket for warmth; *do not* throw water on the victim's face; *do not give liquor* or a stimulant.

Remember: alcohol in combination with certain other drugs can be deadly!

Morning Weather Broadcasts from Base Station Increase Visitor Safety

Because Byron B. Brown, park technician at Buffalo National River (AR), pointed out that field personnel would benefit greatly from a regular morning weather broadcast from the base station, they now receive it each morning at 9:00 A.M.

Knowledge of upcoming weather helps the field personnel plan their day better and gives them valuable information for making decisions regarding visitor safety. Where used, such broadcasts have reduced accidents, particularly on rivers, lakes, mountains, and in wilderness areas.

In addition, visitors frequently request weather information from field personnel; it is most useful to have up-to-date forecasts for them.

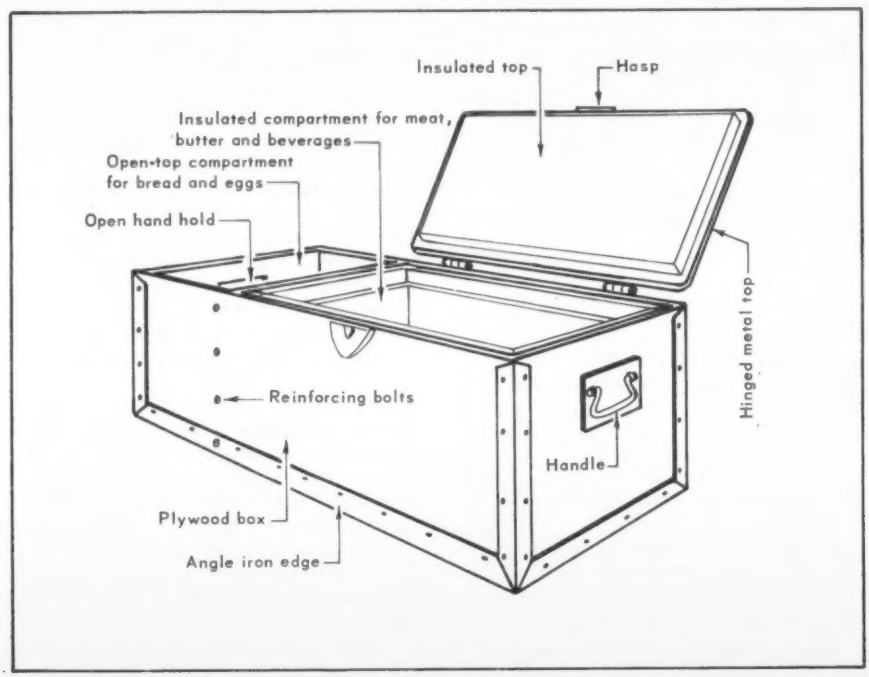
Ingenuity

Improved Food Box for Pack Animals

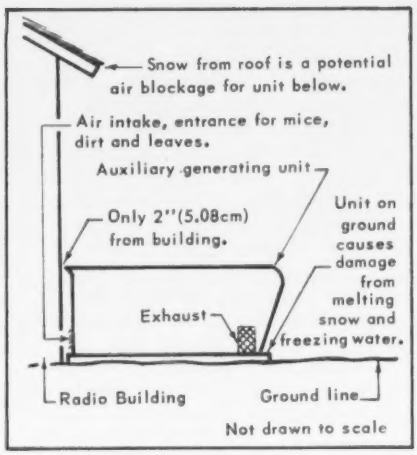
Guides and other park personnel who use pack animals often find that standard size packing coolers are too short to fit easily and comfortably onto the creatures' backs. Difficulties increase when odd weight pairs of loads are involved. Consequently, much trip time is spent in stopping to readjust slipping loads.

Stuart Sorenson, an animal packer at Glacier National Park (MT) shares a practical solution to this problem. Sorenson has designed a longer container with an insulated main compartment and a separate end section for bread and eggs.

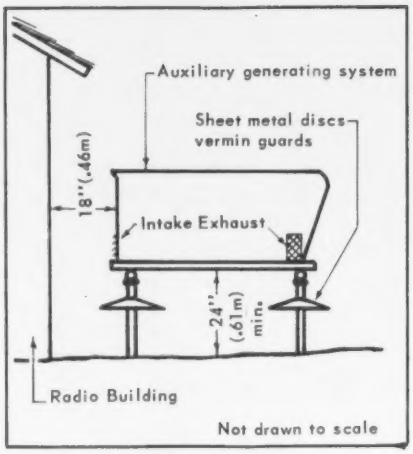
The added length proves much easier to balance and can be adjusted easier when loads are unequal in weight. This design also protects the eggs and butter from getting crushed and leaves more room for perishables in the main part of the cooler.



Modifications Protect Auxiliary Generating System


Snow from roof is a potential air blockage for unit below.
Air intake, entrance for mice, dirt and leaves.
Auxiliary generating unit
Only 2"(5.08cm) from building.
Unit on ground causes damage from melting snow and freezing water.
Exhaust
Radio Building
Ground line
Not drawn to scale

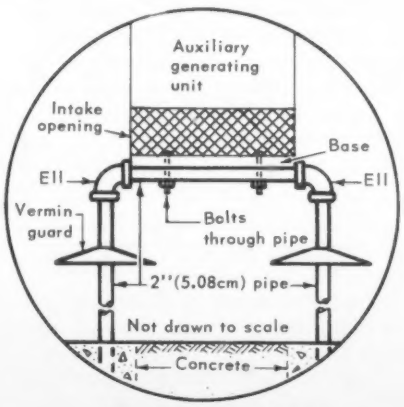
SIDE VIEW(before)



SIDE VIEW(after)

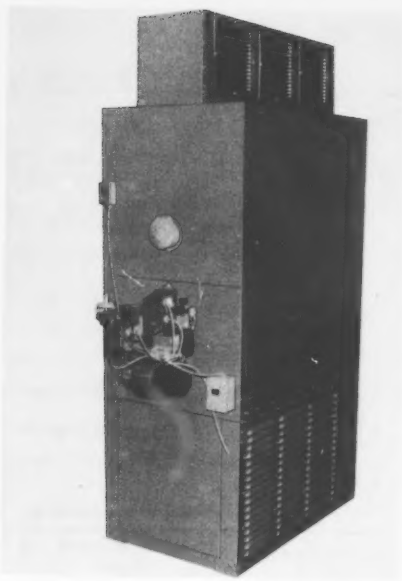
Poor installation of the auxiliary generating system at the Boat Mountain Tower along the Buffalo National River (AR) had left the system vulnerable to many problems. When Maintenance Worker Robert Stanford assumed responsibility for the facility he realized these problems and reinstalled the system, making several improvements.

Stanford's modifications, shown here, prevent premature burnout of the system due to overheating, eliminate a vermin problem without harming the environment, and increase the reliability of a vital radio communications system powered by the generator.



DETAIL OF END VIEW

Recycling and . . .



Heat with Waste Oil!

Disposing of waste oil which accumulates on park and recreation area premises can represent a significant expense. Handling this disposal in an ecologically acceptable manner can pose an even greater problem. Now, the Dravo/Hastings Thermoflo Waste-Oil Heater provides a solution to both these problems.

The Thermoflo is a fully automatic, self-contained, space heating system capable of burning untreated, unprocessed, unblended waste oil. The basic unit is a freestanding, floor-mounted air heater with a nominal heating output capacity of 450,000 btu per hour.

Certified testing by ETL Testing Laboratories, Inc. and Enviro-Test Ltd. found the heater's stack emissions in full compliance with federal EPA standards in field tests burning waste oil with 76 percent carbon and a lead content of 6,000 ppm. However, since waste oil is a fuel of variable composition, applications in strict air quality regions should be coordinated with the factory to assure compliance.

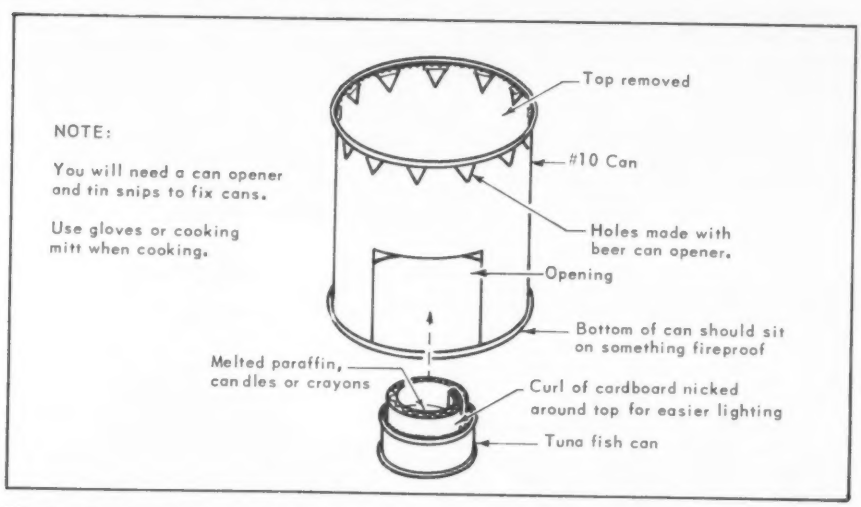
The unit operates on 115-volt power supply. Its heavy-duty construction features a stainless steel combustion chamber and the whole unit is simple to clean and maintain. Furthermore, it offers minimum heating efficiency of 80 percent.

Among the advantages of the Thermoflo are point-of-generation combustion, true energy conservation, and one-step recycling into measurable savings.

The initial premium for the waste-oil heater over a virgin fuel heater can be recovered within two years from fuel savings. Another plus, the waste-oil heater also can burn virgin fuel in the event that waste-oil accumulation is less than anticipated.

Further information about the Thermoflo can be obtained from Ron Dornetta at Dravo Corporation, P.O. Box 9305, Pittsburgh, PA 15225 or by phoning (412) 777-5932.

Homemade Cooking Stove


NOTE:
You will need a can opener and tin snips to fix cans.
Use gloves or cooking mitt when cooking.
Top removed
#10 Can
Holes made with beer can opener.
Opening
Bottom of can should sit on something fireproof
Melted paraffin, candles or crayons
Curl of cardboard nicked around top for easier lighting
Tuna fish can

Here's a handy Girl Scout design for a simple homemade cooking stove. All you need to make it are a can opener, tin snips, a #10 can, and a tuna fish can.

A curled piece of cardboard, pinked at the top for easy lighting, is used as a wick. This sits in an open tuna fish can, partially filled with melted paraffin, candles, or crayons.

As a safety precaution, be sure to wear gloves or cooking mitt while using the stove. Set the stove on a fireproof surface when using.

"No Cost, Low Cost"

The U.S. Department of Energy offers some helpful advice on cutting fuel oil, gas, and electrical costs in this new, illustrated booklet. The publication's 11 suggestions attempt to give consumers the "greatest return for the least effort and expense." For an investment of $100 or less, the government estimates, consumers can effect these relatively simple, energy-saving measures and reduce their annual utility bills by as much as 25 percent.

Suggestions included range from a thimble-size, plastic "flow controller" for the shower, available for about $2, to caulking or insulating gaps under baseboards and around electrical outlets and pipes.

To obtain a free copy of "No Cost, Low Cost," write to the Technical Information Center, P.O. Box 62, Oakridge, TN 37830.

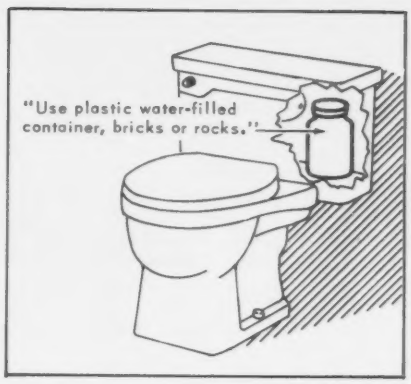
Energy Saving

Save Water With Each Flush

Diana Hwang, park technician at Independence National Historical Park (PA), reminds readers of an old water conservation measure that's still effective and easy to implement—cut down the amount of water used per flush in your toilets!

The standard toilet uses 7 gallons (26.6 l) or more water per flush, far more than is needed to do the job effectively. To reduce the amount of water used, simply displace some space in the water reservoir that allots and holds water for the next flush.

Anything from plastic water-filled containers salvaged from the office to bricks and/or rocks can be used to displace the water. The size and shape of the objects will depend upon the size and shape of your water reservoir and



where the objects can be placed within it.

Depending upon the size of your recreation area or park, the water savings from such a simple step can be substantial.

Regulate Your Hot Water Temperature

Peter R. Amodei shares another good energy-saving tip involving the regulation of hot water temperature.

Amodei, an air conditioning equipment mechanic at Independence National Historical Park (PA), felt it was wasteful to keep hot water temperature at a constant 190 degrees F. at all times, regardless of the outside air temperature. So he reset the hot water temperature to correlate with that of the outside air. For example, when the outside temperature dropped to 0 degrees F., the water was heated to 190 degrees F. However, when the outside temperature rose to 60 degrees F. or more, the hot water needed only to be heated to 120 degrees F.

Amodei regulated the temperature by adapting the Honeywell Receiver Controller and Temperature Transmitter to work automatically. This adjustment, lowering the hot water temperature, resulted in a reduction of steam usage, yet the hot water temperature can be increased whenever needed, as the outside temperature drops. Amodei can provide more specifics to readers who would like them. Contact him at (215) 597-7622.

Institute for Local Self-Reliance

The Institute for Local Self-Reliance, a Washington, DC-based organization, now offers services and publications that the park and recreation community might find useful.

Formed to provide technical assistance to urban dwellers working toward community-based and community-controlled development, the organization has projects underway on energy, urban agriculture, and waste utilization. It also has published a number of inexpensive booklets and reports. The following two publications were noted in a recent issue of *Conservation News:* "Economic Feasibility of Recycling," a 26-page report describing recycling activities nationwide from 1970 to the present ($4.00); and "Garbage to Energy Packet," a collection of articles and letters summarizing the Institute's negative position on high-technology resource recovery plants ($3.00). Both are written by Dr. Neil Seldman of the Institute's staff.

For more information on the Institute, write: Institute for Local Self-Reliance, 1717 18th Street, NW, Washington, DC 20009.

OCCUPATIONAL HAZARDS AND INDUSTRIAL HYGIENE

(continued from p. 25)

are inhaled. When ventilation is inadequate to bring vapor levels below the federal standards, is not feasible, or while the controls are being instituted, the employee should be given adequate and proper personal protective equipment such as respirators, safety goggles, and protective clothing.

In the absence of these controls, inhalation of harmful vapors can affect the central nervous system and cause nausea, headaches, intoxication, and sometimes even death. Prolonged, repeated contact with a liquid solvent can remove the natural oils from the skin, producing a dry, fissured, skin inflammation.

Too often, workers use solvents with bare hands and with insufficient ventilation or protection. One should never degrease parts using bare hands or remove paint from the hands with solvents. Yet, in many parks, these practices are widespread.

Although not the most serious effect, industrial dermatitis is the most prevalent injury resulting from exposure to solvents. These skin problems can be avoided by observing good, safe work habits, by the use of protective barrier creams and clothing.

Some of these solvents can be very toxic and produce far-reaching effects. For example, chronic exposure to benzene has been proven to cause changes in the blood-forming organs. Long latency periods of 10 to 15 years from time of exposure to development of disease are possible.

This brings up another consideration in occupational hazards. Many of the ill effects will show up only after years of exposure or years after an exposure. An employee may not realize the potential harm of these agents when working with them because he or she is not immediately affected.

(continued on p. 30)

(continued from p. 29)

Asbestos

A prime example of this is asbestos. For years, asbestos was used by the shipbuilding industry as lining for the ship's bulkheads and as heat insulation around pipes and boilers. Asbestos is also used in brake linings, asbestos tile, gaskets, and as heat and acoustical insulation. Workers who were exposed to airborne respirable asbestos 10 to 30 years ago now are exhibiting its ill effects. These can include chronic cough, difficulty in breathing, respiratory infections, cancer of the stomach and lungs, and a rare cancer form which involves the linings of the chest and abdominal cavities.

As long as the asbestos fibers remain bonded together or encased, they pose no threat. However, when an asbestos-containing product is cut, ground, sanded, or in a friable state, the fibers can become airborne and respirable.

Employees working with or exposed to asbestos now must be fully informed of the potential hazard and, where indicated, provided with the necessary protective equipment. In conjunction with the protective equipment, there are specific work practices that will help reduce dispersion of the fibers.

Physical Stress—Noise

Physical stresses in the park include oscillatory vibration (noise, vibration), atmospheric stresses, (heat, cold, and air pressure), and radiation (ionizing and non-ionizing). Band saws, chain saws, tractors, snowmobiles, and compressors all can produce excessive noise.

If the employee is subjected to high levels of noise over a sufficient period of time, temporary or permanent hearing loss can occur. Hearing loss also can be caused by a sudden, loud explosion. Other factors which can affect the extent and degree of loss are the type of noise, the age of the individual, and prior injury.

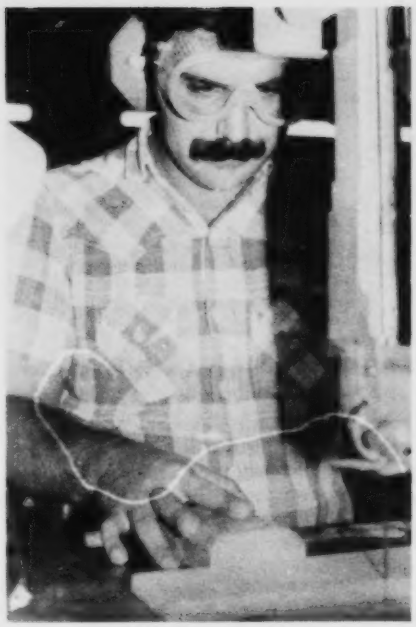
The intensity or loudness of noise is measured in units of decibel (dB). For comparison, the loudness of normal conversation is about 60 dBA, lawn mowers register 91 dBA, chain saws range between 100–115 dBA, and a pneumatic tree chipper tips at 120 dBA. Table 1 shows the allowable decibel exposure limits in the work place.

Table 1

Duration per day Hours	Sound level dBA Slow response
8	90
6	92
4	95
3	97
2	100
1½	102
1	105
½	110
¼	115

Engineering controls such as mufflers, shock absorbers, or enclosures and administrative controls like reducing duration of exposure are preferred. However, when they are inadequate to reduce the noise levels to acceptable limits, hearing attenuators such as ear plugs or muffs should be worn.

Ear muffs protect laborer from 120 dBA intensity of tree chipper. NPS



Personal protective equipment varies with the work equipment. Bill Davis, NPS

Radiation

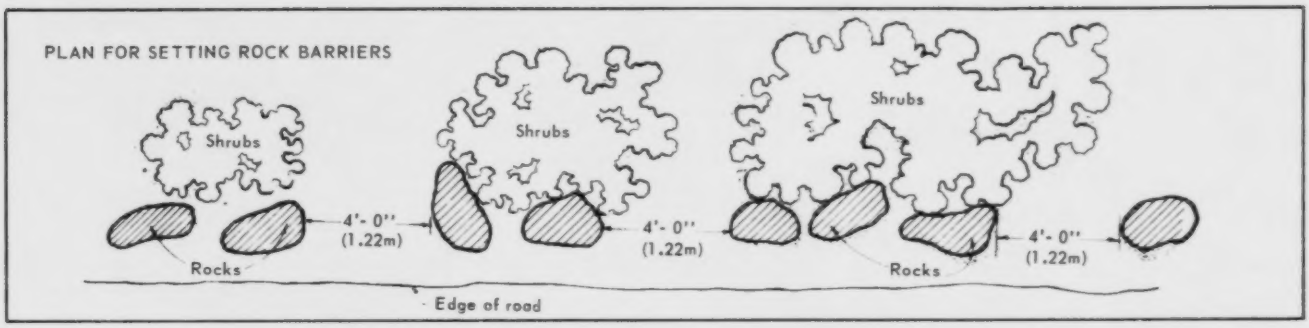
Non-ionizing radiation includes ultraviolet and infrared rays. Ultraviolet or UV radiation is produced naturally by the sun and artificially by arcs operating at high temperatures. These invisible rays can cause a painful irritation to the unprotected eye known as "welder's flash." In addition to the welder, there also is danger to his coworkers and to passersby who might look at the arc accidentally. Therefore, it is very important that all such work be shielded.

Other effects of UV radiation include sunburns. Sunburns are of consequence to employees who spend the majority of their time outdoors or who are chronically exposed, for a dry, thickened, leathery skin can result. This actinic skin is a warning that other more serious conditions may develop. Chronic exposure to infrared radiation (IR) has been known to cause cataracts.

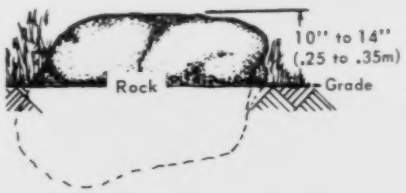
Although direction and initial support come from management, it is the first line supervisor and the employee who make controls functional. It is at this level that the directives and guidelines must live and breathe. Spurred by management, each individual must take an active interest in the safety of his or her own job surroundings.

Connie Villar is an Industrial Hygiene Specialist in the National Park Service Division of Safety Management.

Maintenance



Protect Fragile Shrubs with a Rock Barrier



ELEVATION OF ROCK SET IN GROUND

Canada's Department of Natural Resources shares this idea for protecting shrubs that lie near roads or walkways by placing rock barriers strategically in front of them.

Use the largest rocks you can handle practically and set them in a natural, irregular pattern rather than a straight line. Each rock should project at least 10" (25 cm) above the ground; but only about 1/3 of the rock should be visible, the rest should be buried. For a solid, natural appearance and to prevent removal, set the rocks on their natural bed, avoiding sharp corners and points above the ground.

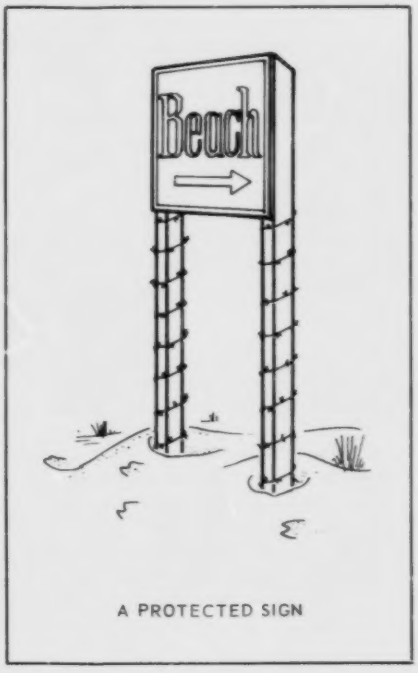
It is recommended that the rocks not be painted and that their naturally weathered appearance be preserved.

Protecting Signs in Places Where Animals Graze

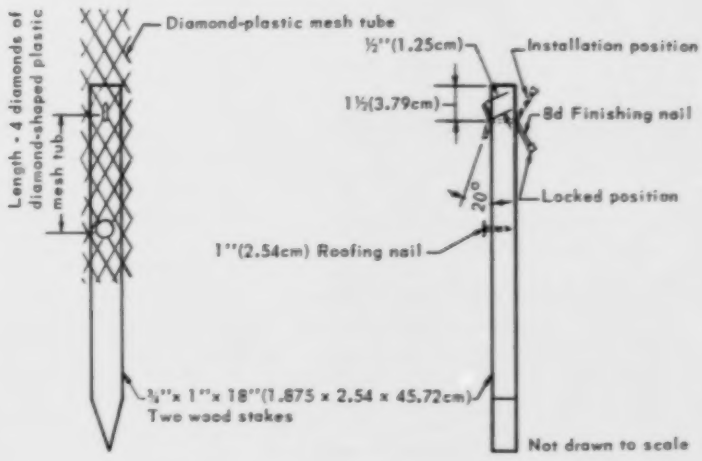
Maintaining signs in areas where cows, horses, elk, or other animals graze can be difficult. The animals rub against the signs and their posts; this results in bent or tipped signs that look bad and are hard to read.

Now Richard L. Jackson, sign maker at Point Reyes National Seashore (CA), offers a simple solution to this problem. Wrap barbed wire around sign posts or other posts that are placed in pasture areas. And place the sign higher than the grazing stock that frequent the area.

Fasten the barbed wire to the post with fence staples, starting at the top and winding down. Leave approximately 4" to 6" (10 × 15 cm) between wraps and be sure to wear gloves to pull the wire taut. For the posts, Jackson recommends rough redwood 4 × 4s (10 × 10 cm). Jackson has used signs like these in large fields where 20 to 30 head of horses run and has found them successful. As an added bonus, the barbed wire also deters vandals from tampering with the signs. This idea not only improves the appearance of an area and assures that visitors can read essential messages and directions, it also saves the government the cost of replacing defaced posts and bent signs.



A PROTECTED SIGN



ATTACHMENT OF MESH TO STAKE

How to Protect Western Conifer Seedlings

From the Forest Service's *Equip Tips* comes a simple but effective way of protecting conifer seedlings in areas subjected to animal browsing. Cooperative field investigations by the U.S. Fish and Wildlife Service and the Missoula Equipment Development Center found that plastic mesh tubes placed over seedlings kept browsing creatures away from the terminal leaders.

Diamond-shaped polypropylene mesh tubes proved to be the most rigid and offered the best seedling support. *Equip Tips* recommends a 3/8" (.94 cm) mesh opening since this size permits lateral branch growth. The tubes should be 2" to 3" (5 to 7.5 cm) in diameter and about 3' (90 cm) long. Longer tubes may be needed where elk browse.

Sunlight does degrade the plastic protectors. Just how fast they break down depends on their color and the amount of ultraviolet inhibitor in the plastic. The best choice seems to be black plastic tubes which last more than 10 years.

During installation, the protector must be carefully secured over the seedling to insure that the terminal leader remains within the tube as the seedling grows. This can be done in many ways.

For rigid tubes of diamond-shaped mesh, straight or spiral pins of 9-gage wire offer adequate support. Hook the straight wire pins through the mesh and drive or press them into the ground. Spiral pins, cut from fence stays, can be woven through the mesh and pressed into the ground with a nut driver; leave about 2" (5 cm) protruding above the mesh so the tube cannot work loose. Both kinds of wire pins should be 14" (36 cm) long. They cost about 3¢ each.

Another way to secure and support the tubes is by using wooden laths with twist ties. Periodic inspections should be scheduled after installation, however, since they often break or rot.

On steep or rocky ground, wooden stakes are recommended. They should measure 18" × 1" × 3/4" (45 × 2.5 × 1.8 cm). Two nails hold the tube to each stake: a 1" (2.5 cm) roofing nail driven partially into each stake and, above this, a 2 1/2" (6.25 cm) 8 penny finishing nail, bent at both ends. Drive the stakes into the ground beside the plastic tube. Hook the lower nail onto the mesh; then rotate the top nail to secure the tube. These wooden stakes, with the necessary nails, cost about 10¢ each.

These plastic mesh seedling protectors are manufactured by Conwed Corp. in Minneapolis, MN; DuPont, Inc. in Wilmington, DE; and Nalle Plastics, Inc. in Austin, TX. Prices vary from 4¢ to 19¢ per foot (12¢ to 57¢ per m), depending on the manufacturer, quantity, diameter size, and freight charges.

Install a Trailhead Register and Reduce Graffiti

Trail managers having graffiti problems might try this suggestion shared by James O. Stiles, park technician at Arches National Park (UT).

Stiles and other park employees were appalled to find so many visitors leaving their names all over the canyon walls along the Delicate Arch and Devils Garden Trails. Since people have such a strong urge to immortalize their visits in this way, Stiles felt the solution was to provide them with a nondestructive means of doing so. Accordingly, he suggested placing registers at the trailheads.

Besides offering visitors an acceptable way to record their presence, the registers can serve as a useful park record. Stiles points out that many parks that have installed such a register have found it to be effective in substantially reducing graffiti.

HCRS
U.S. Department of the Interior
Heritage Conservation and Recreation Service

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of the Interior

Heritage Conservation
and Recreation Service

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Grist

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Volume 24/Number 5

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Volunteer Partnerships at Jefferson National Expansion Memorial

by Peggy O'Dell

The National Park Service Volunteer in Parks Program has offered Jefferson National Expansion Memorial National Historic Site an opportunity to expand into the community and tap resources otherwise unavailable to park managers. For the last two years we have been concentrating the efforts of the interpretive managers and the Museum Education Office to develop a quality program which will attract willing people in the community and let the community know of the resources available for its use.

Defining your goals and constraints is the first step involved in establishing a volunteer program. You must consider some basic questions. Do you really need volunteers to add to your existing programs? Will volunteers add the elements you need to improve the quality of your program? Will they be an *integral part* of your program? Remember, volunteers must feel needed or they will quickly lose interest in working.

To answer some of these questions we developed a list of activities which we feel volunteers can do well and which are important to the successful management of the park. They include:

- Giving programs in the Museum of Westward Expansion and the Old Courthouse, two areas dealing with the westward expansion movement of the American frontier.
- Providing roving interpretation in the two museums.
- Providing living history demonstrations of traditional crafts.
- Staffing the information desk and other visitor services functions within the visitor center.

The life and history of the Plains Indians come to life with the help of volunteers at the Museum of Westward Expansion. Photo credit: Joseph Matthews

Not all our volunteer work involves public contact. Many individuals have contributed immensely to the success of our program by researching topics, providing library services, co-curating special exhibits, writing educational materials to complement the interpretive program, analyzing visitor use patterns, and so on.

A particularly helpful group is our handicapped advisors. These individuals, who are disabled themselves in one way or another, serve as advisors, assisting Jefferson National Expansion Memorial's staff in defining and meeting the needs of disabled visitors.

Word-of-Mouth and Formal Recruitment Successful

Volunteers are able to do almost anything the paid interpretive staff can do but they may not be used to replace paid employees. The first thing we learned about recruiting VIPs was to be open-minded and to publicize the program widely. Word-of-mouth is an especially valuable tool among volunteers. For instance, the grandmother of a former employee works here as a volunteer 20 hours each week. She recruited her sister, who has spread the word among the volunteer organization to which she belongs. That organization has proved to be another steady source of aid.

Recruitment along formal lines is also successful. Articles in the city and suburban newspapers have attracted a substantial number of interested candidates. Others have been contacted through churches, schools, and senior citizen groups. Even the unsuspecting visitor who mentions that he or she enjoys visiting the park, subsequently may be signed up as a volunteer.

Training and Personal Development

The level of expertise a volunteer needs to present a part of your park program does not just happen. We select our volunteers in much the

(Continued on p. 36)

Grist

A publication of Park Practice

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Heritage Conservation and Recreation Service
Division of Park and Recreation Technical Services
U.S. Department of the Interior

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District Lithography Company, Inc., Printer

Park Practice includes: *Trends*, a quarterly publication on topics of general interest in park and recreation management and programming; *Grist*, a bi-monthly publication on practical solutions to everyday problems in park and recreation operations; and *Design*, a quarterly compendium of plans for park and recreation structures which demonstrate quality design and intelligent use of materials.

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Articles, suggestions, ideas and comments are invited and should be sent to Park Practice, U.S. Department of the Interior, Heritage Conservation and Recreation Service, 440 G Street, NW, Washington, D.C. 20243.

Membership in Park Practice includes a subscription to all three publications and selected back issues in vinyl binders with indices and all publications for the calendar year.

The initial membership fee is $80; annual renewal is $20. A separate subscription to *Grist* is $15 initially, and $7.50 on renewal. Subscription applications and fees, and membership inquiries should be sent *only* to: National Recreation and Park Association, 1601 N. Kent Street, Arlington, Va. 22209.

FOR SAFETY'S SAKE

All ideas and suggestions shared in the pages of *GRIST* are presented as guidelines, not final working blueprints. Be sure to check any device or plan you want to adapt for compliance with national, state and local safety codes.

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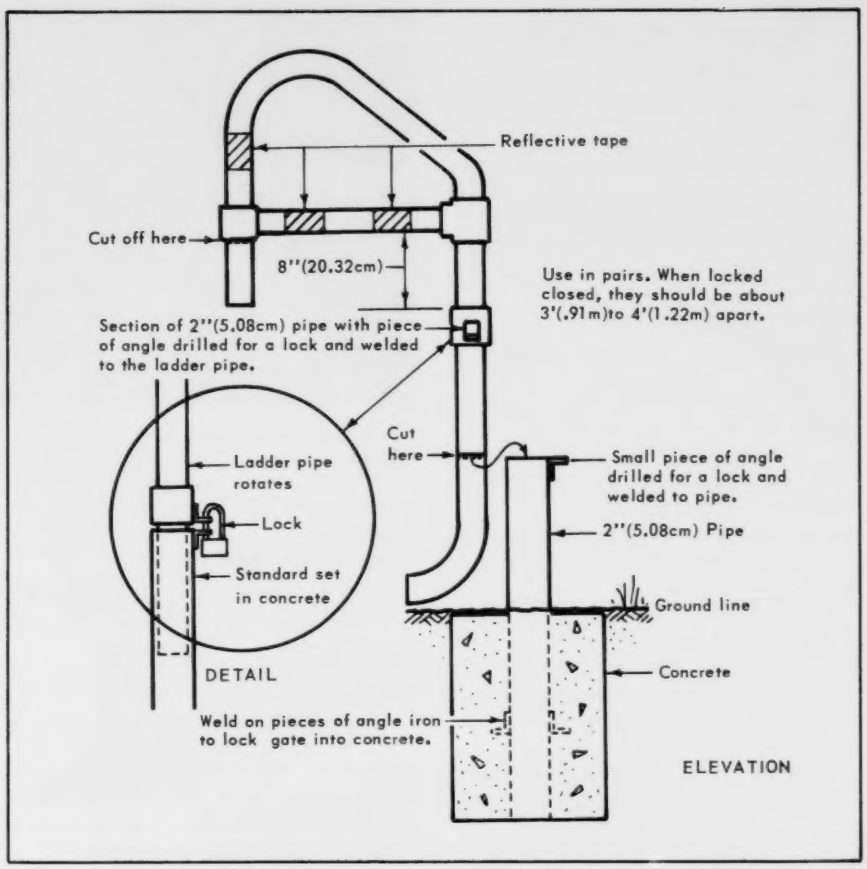

Reflective tape
Cut off here
8"(20.32cm)
Use in pairs. When locked closed, they should be about 3'(.91m)to 4'(1.22m) apart.
Section of 2"(5.08cm) pipe with piece of angle drilled for a lock and welded to the ladder pipe.
Cut here
Small piece of angle drilled for a lock and welded to pipe.
Ladder pipe rotates
Lock
2"(5.08cm) Pipe
Standard set in concrete
Ground line
DETAIL
Concrete
Weld on pieces of angle iron to lock gate into concrete.
ELEVATION

Reusing Old Pool Ladders

Before junking old pool ladders, consider this idea sent by Walter Carpenter, maintenance repairman at Tippecanoe River State Park, Indiana: convert them into vehicle barrier gates, which will allow pedestrian and bicycle traffic while keeping vehicles off service roads leading into playgrounds and picnic areas.

Remove the ladder's steps, keeping the two side frames. Cut off the bottom parts of the frame at the desired length. Weld a larger piece of pipe onto the leg of the ladder approximately 8" (20 cm) below the lateral pipe support. Slip the pipe down into a pipe of a larger dimension where it will meet the welded pipe sleeve. Then set the bottom pipe in concrete. Weld two angle irons on each pipe with predrilled holes in each for locks. Determine the distance needed for pedestrian traffic and repeat directly opposite from the first gate.

After both gates are painted, add strips of highway reflective tape for night visibility.

Our thanks to John Bergman, property manager of the park, for sharing Carpenter's clever idea with *GRIST!*

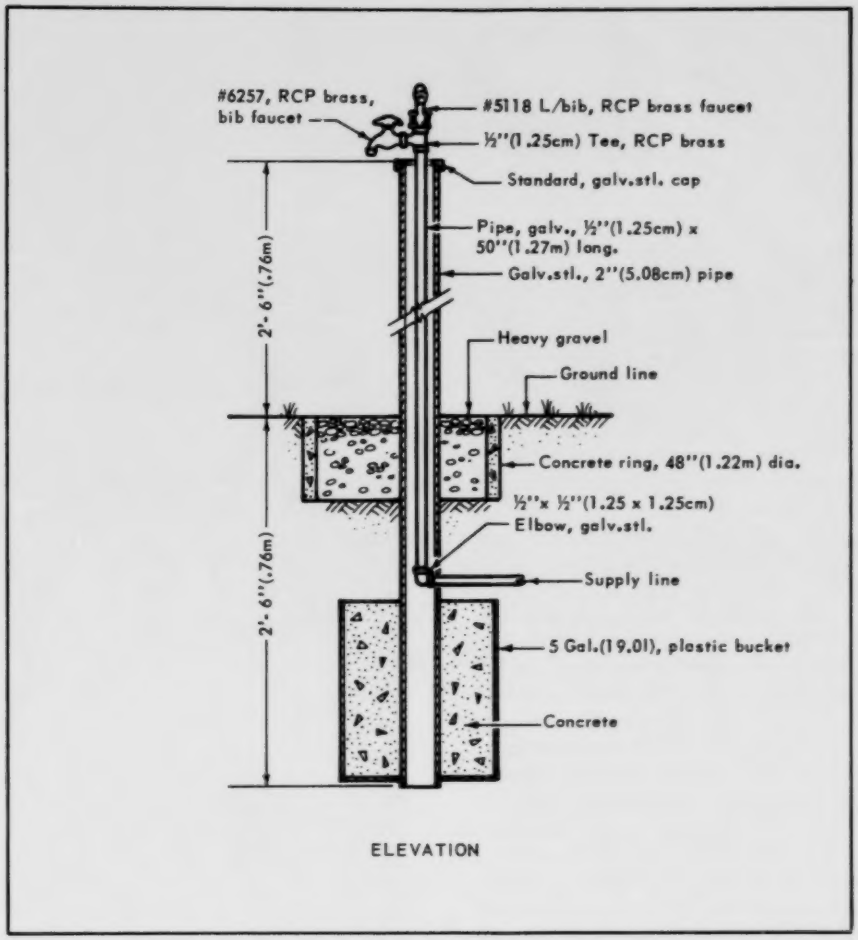
Grease Washing Station Captures Hand Cleaner for Reuse

Money down the drain is a thing of the past at Canoe Creek State Park, Pennsylvania, since foreman Dave Hanna designed and constructed a grease washing station.

The station consists of a cabinet sink, electric motor, in-line water pump, 5-gallon (19 l) container, filter screen and hoses, and cleaning fluid.

A switch on the front of the sink is turned on; the electric motor starts the pump; the faucet is opened and cleaning fluid is drawn out of the 5-gallon (19 l) container. The siphon hose, placed off the bottom about one-fourth of the depth of the container, is screened.

As the operator washes machine parts or his hands, the grease and sediments settle to the bottom of the container. As a result, the hand cleaner rises to the top, and can be recycled back through the pump.



ELEVATION

Fresh Water Supply

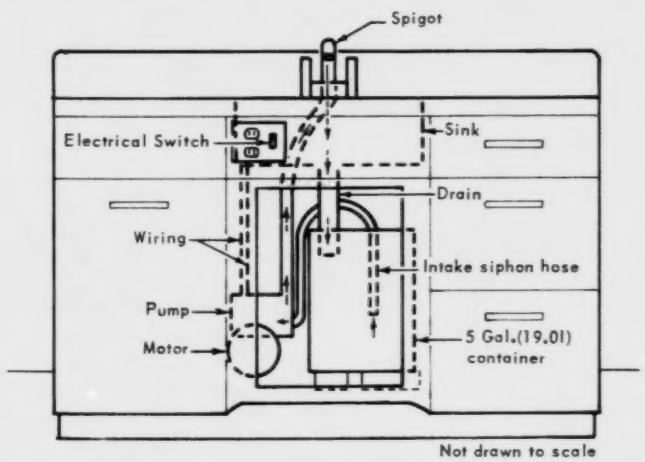
Recreation areas need a supply of fresh, clean drinking water, but how to provide it is a challenging problem.

One design solution has been suggested by Clark E. Travelpiece, recreation development assistant with Pennsylvania Power & Light Company (PP&L). The company owns and operates numerous campgrounds, picnic areas, and boat launching sites that require potable water distribution systems.

Travelpiece reports that PP&L has tried a number of different designs and has found this particular one to be very effective because all piping in the design is enclosed in the larger 2" (5 cm) galvanized pipe, which is vandal-proof.

During the off-season, Travelpiece says hose bibs and bubblers are removed and a ½" (1.25 cm) galvanized cap is installed on the riser piping.

The approximate cost of each completed unit is $100.



WASHING STATION

(Continued from p. 33)

same way as we do our paid staff. We have found that volunteers require and deserve the same kind of training, encouragement, and personal development as paid staff members. Of course, the complexity of the task and the individual's own expertise determine the amount of time involved in training.

For example, our volunteer interpreters go through the same rigorous two-week training course as paid technicians do. This familiarizes them with the park mission, the concept of interpretation, the content of the museums, and the thematic content of the interpretive program.

If volunteers are going to represent your park, they must demonstrate the quality necessary to uphold your organization's reputation. That may mean spending the same portion of your time working with new volunteers as with any new employee. In the long run it does pay off. We also have found that the volunteers appreciate involvement with the paid staff; it helps them gain the same degree of "professionalism." We all learn from each other.

After the initial training period, we encourage our volunteers to continue their personal growth. It can be difficult to maintain skills and enthusiasm for a job where you have to remember a century of American history but only work two or three days a week. Volunteers need help and encouragement to continue learning and expanding their field of knowledge. Individual counselling, periodic group meetings, in-service training, and a pat on the back all serve important roles in the development of our volunteer staff.

Commitment

We arrange specific work schedules with the volunteers which they must follow. They are expected to report conscientiously for the hours mutually agreed upon. They realize that they have accepted a responsibility and that we rely upon them. They know they are important members of the staff.

Volunteer gives an interpretive talk in the Pioneer Cabin at the Old Courthouse.

Photo credit: Joseph Matthews

Pride in their work and an intense commitment to the park often develop. At the Arch and the Old Courthouse, we recently saw 100 percent turnover in the paid staff of interpreters in one year. In contrast, volunteers who started when the courthouse opened its living history rooms in 1970 are still with us, still meeting their monthly commitment of service. They provide an extremely stable work force.

Recognition

It is important to recognize the contributions of these individuals. At Jefferson National Expansion Memorial, we hold our annual luncheon in the fall. Each volunteer is given a token gift and a certificate of appreciation. This small thanks for the services received is appreciated but often the real reward is intrinsic: knowledge of a service rendered, a job well done, and continued personal growth.

Once the volunteers are comfortable with a job, we find they often want to expand their involvement. Individuals who formerly were intimidated by the thought of standing up in front of a group and talking for thirty minutes now are distressed when groups cancel their tour reservations!

Jefferson National Expansion Memorial now has a staff of thirty-seven volunteers which donates an average of 1,000 hours of service monthly. The volunteers provide direct services for the park visitors, relief for the paid staff, clerical assistance, research and library aid, and dozens of other services. The quality of a visitor's experience in the park is directly influenced by our VIPs. They are indeed very important people.

Peggy O'Dell is a Supervisory Park Ranger at Jefferson National Expansion Memorial NHS . *Ms. O'Dell is Supervisor of the Gateway Arch, which includes the Museum of Westward Expansion and the Visitor Center. A graduate of the University of Missouri, Ms. O'Dell worked as a summer seasonal at Jefferson National Expansion Memorial and as a Park Ranger with the Corps of Engineers. She assumed her present position with the National Park Service in 1977.*

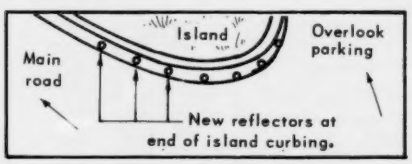
Making Traffic Islands Safe

While traffic islands are useful and necessary road safety features, they also can be hazards, as the island at Lane Pinnacle Overlook along the Blue Ridge Parkway in western North Carolina proved.

At night, the island was hard to spot, and in fog, which is common to the area, it was impossible to see. As a result, maintenance crews spent many work hours repairing the island, and it was a safety threat to drivers.

Parkway Maintenance Mechanic Donald H. Guise suggested a simple solution: install reflectors on the 5" (12.5 cm) high curb at each end and on the roadway side of the island.

Because his suggestion helped eliminate a hazard and prevent accidents, Guise was presented a $50 National Park Service incentive award.



Linseed Oil for Axe Heads

To keep axe heads from becoming loose on the handle, Maintenance Worker R. E. Norman of Homestead National Monument, Nebraska, suggests storing axes head down in a container with about 3 to 4 inches (7.5-10 cm) of raw linseed oil.

The oil swells the wood, making a tight fit between head and handle, and also keeps the head from rusting.

In addition to providing a safer tool, this practice will prolong the life of the axe.

When 2-Wheel Drives Can't Get There

Remote beach areas are often popular visitor areas. This can create special problems of safe emergency transportation of injured persons, especially those sustaining back or neck injuries, fractures, or requiring cardiopulmonary resuscitation.

Assateague Island, Virginia, is a case in point. Melvin L. Olsen, supervisory park ranger, reports how the situation is handled there:

"Assateague Island is 37 miles (59.2 km) long. Of that distance, only about 6 miles (9.6 km) is adjacent to roads accessible by 2-wheel drive vehicles (normal ambulances). The remaining 31 miles (49.6 km), even though accessible only by 4-wheel drive and foot, are still heavily used by the public.

"This off-road visitor use presents a potentially serious problem in the event spine board or other types of ambulance services are needed. No off-road 4-wheel drive ambulances are available.

"This past summer all Tom's Cove District protection 4-wheel drive pickups were modified to carry a spine board in such a way that it would be secure and positioned so that CPR and other necessary first aid treatments could be safely and satisfactorily administered during transportation of the victim from the beach to the ambulance.

"Two holes were drilled in each side of the pickup's bed. Two proportional holes were drilled in each end of all District spine boards. Paint marks were made on the holes of the spine boards and pickup bed sides for quick and correct spine board placement. Once in place, 'I' bolts were inserted in each hole securing the spine board to the pickup's bed.

"A variety of tests were conducted simulating actual situations. The tests consistently demonstrated that a spine board victim could be moved from the ground to the pickup's bed and completely secured in approximately 10 seconds. This means there would be only a 10-second delay in CPR application as compared to all the delays and problems associated with the administration of CPR to a hand-carried victim.

"The spine board/pickup setup also proved that one person, if necessary, could secure the victim to the pickup bed and safely transport the victim to an ambulance."

Remote areas that are inaccessible by 2-wheel drive ambulances could benefit greatly from this simple spine board/pickup modification, and, if the spine boards already are available, the only cost is the purchase of four "I" bolts.

Share Your Good Ideas with *GRIST!*

Dear Reader:
We at the Heritage Conservation and Recreation Service are interested in your comments and suggestions about this publication. We have provided a form in order for you to express whatever opinions you have. If you wish to comment, please remove this user evaluation page and fold it so that the HCRS address appears on the outside. After folding, use tape or staples to close. No postage is necessary.

If you've come up with a workable solution to an on-the-job problem, share it with fellow park and recreation practitioners through *GRIST*.

Just send us a full description of your idea and a labeled diagram of any device or product modification involved.

We'd also like a black and white glossy photograph showing the application of your suggestion. This photo should be of good quality and in sharp focus. For best reproduction, we like to receive 8" x 10" photos, but smaller ones can be used if their quality is good.

So pass the word along. *GRIST* wants to hear what's working for you.

Preserving "You-Are-Here" Maps

Maps to tell visitors just where they are in a park or recreation area are vital, but keeping those maps sheltered from weather and vandals is a tough challenge.

At Peninsula State Park, Wisconsin, Carpenter Ervin A. Stahl came up with this design for a trail map display case.

The boxes, situated throughout the property, contain a map pinpointing the visitor's location.

Assembling the 16½" x 2¼" (41.25 cm x 5.625 cm) display box is done in the field by attaching the precut pieces to a 4" x 4" (10 cm x 10 cm) post. First the back is attached, then the bottom, sides, and top.

Because the back piece and Plexiglas cover are recessed within the framework grooves, the display box is relatively weatherproof. Vent holes drilled in the bottom piece provide air circulation to prevent condensation behind the Plexiglas.

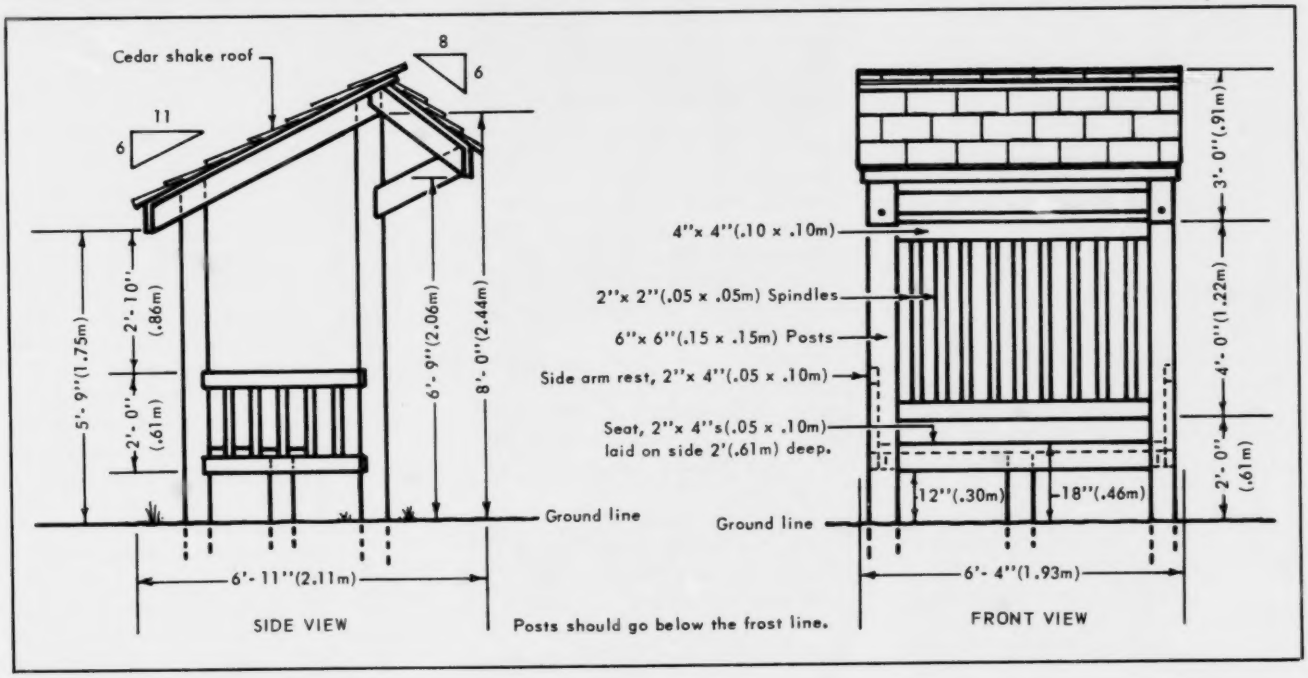
To help block vandalism, any of the new polycarbonate plastics can be used on the box. →

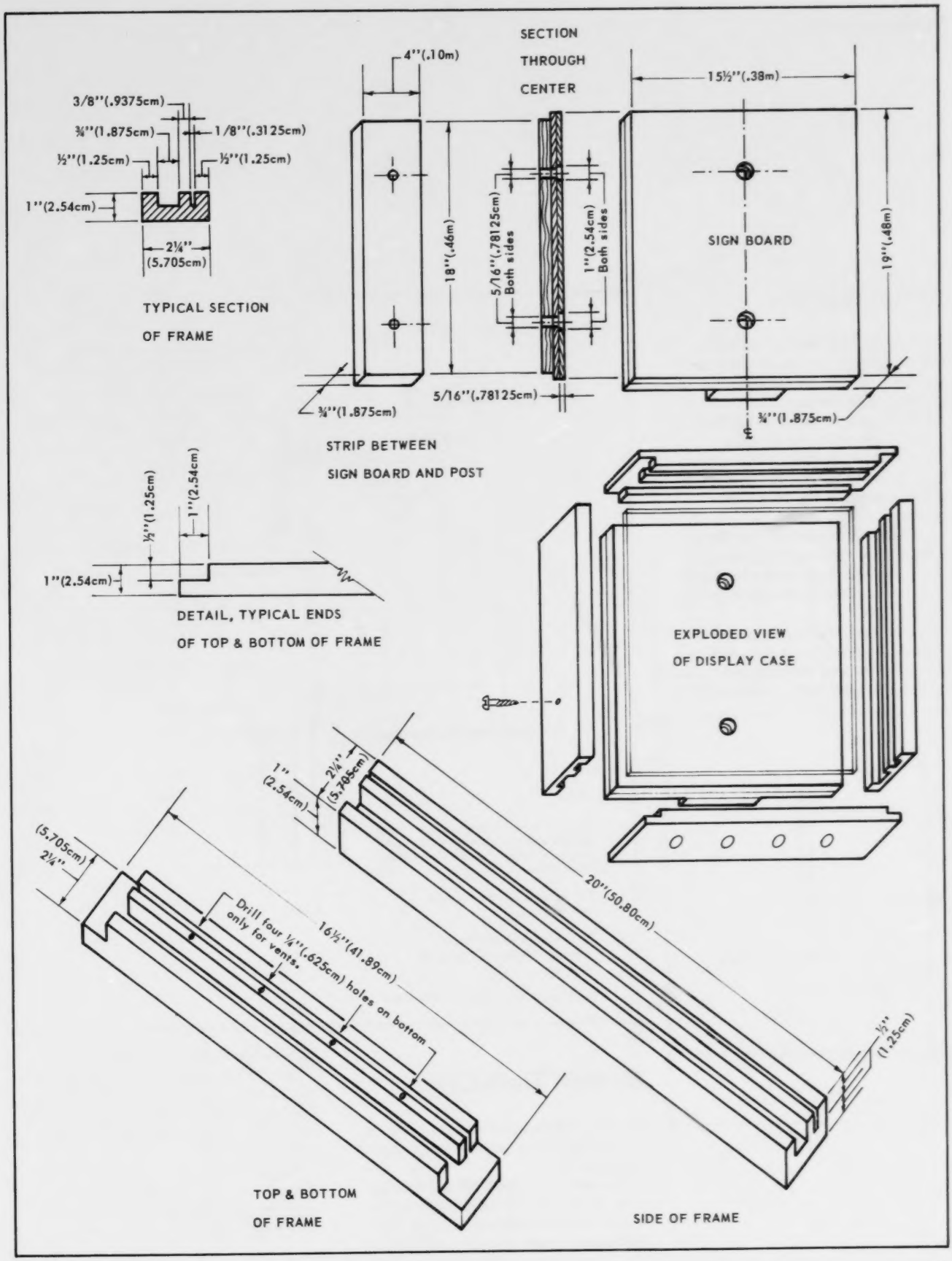
Shake Shingle Shelter

People are taking shelter from the elements in style in Norfolk, Virginia, since Tim Priegel, designer/planner with the city, drew plans for a small park shelter.

The structures are built completely out of salt-treated lumber with all galvanized nails and fittings. Approximate cost of the shelter, minus labor, is $450.

Another advantage of this shelter design: it can be expanded easily to serve as a protected bus stop. ↓




3/8"(.9375cm)
¾"(1.875cm)
1/8"(.3125cm)
½"(1.25cm)
½"(1.25cm)
1"(2.54cm)
2¼"
(5.705cm)
TYPICAL SECTION
OF FRAME
SECTION
THROUGH
CENTER
4"(.10m)
15½"(.38m)
18"(.46m)
5/16"(.78125cm)
Both sides
1"(2.54cm)
Both sides
SIGN BOARD
19"(.48m)
5/16"(.78125cm)
¾"(1.875cm)
¾"(1.875cm)
STRIP BETWEEN
SIGN BOARD AND POST
½"(1.25cm)
1"(2.54cm)
1"(2.54cm)
DETAIL, TYPICAL ENDS
OF TOP & BOTTOM OF FRAME
EXPLODED VIEW
OF DISPLAY CASE
1"
(2.54cm)
2¼"
(5.705cm)
20"(50.80cm)
(5.705cm)
2¼"
Drill four ¼"(.625cm) holes on bottom
only for vents.
16½"(41.89cm)
½"
(1.25cm)
TOP & BOTTOM
OF FRAME
SIDE OF FRAME

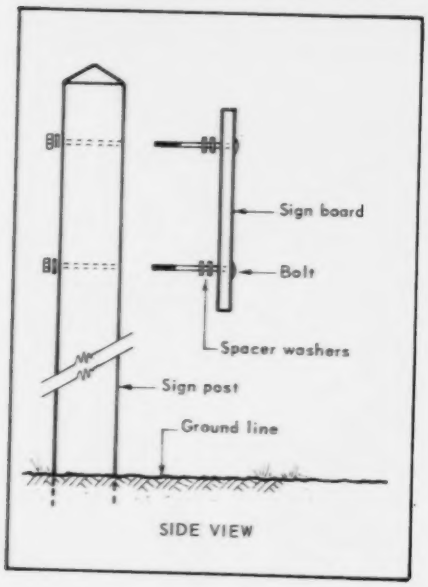
Prevent Sign Rot

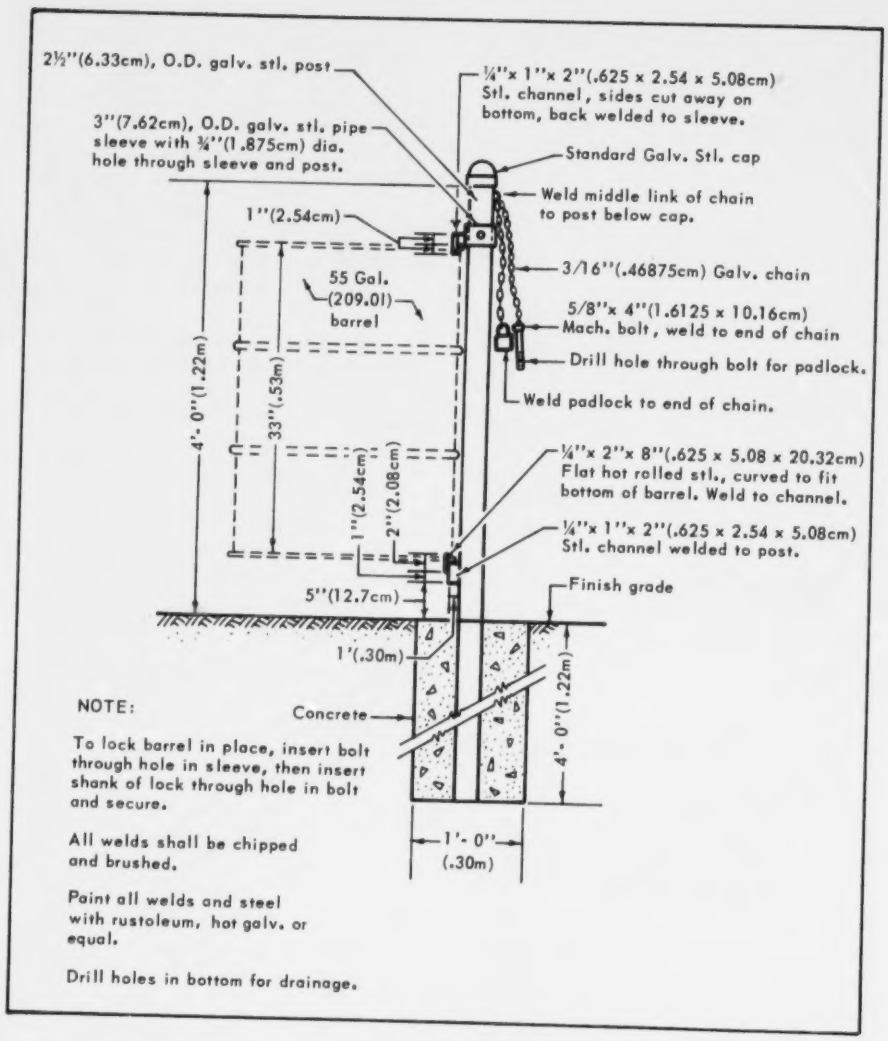
Good signs lend themselves to the surroundings, provide information, and help the flow of traffic in parks. But they're also expensive.

To help preserve signs, William Dougal, unit manager at Lake Waramaug State Park, Connecticut, suggests using several space washers on bolts between the post and signboard.

For just a few pennies, the life of an expensive sign can be prolonged by making space for water to drain away and by letting air get in to dry out moisture.

Dougal says that without the space washers, invariably rot occurs where the signboard and the post meet. And he should know; he is a signmaker.




2½"(6.33cm), O.D. galv. stl. post
3"(7.62cm), O.D. galv. stl. pipe sleeve with ¾"(1.875cm) dia. hole through sleeve and post.
¼"x 1"x 2"(.625 x 2.54 x 5.08cm) Stl. channel, sides cut away on bottom, back welded to sleeve.
Standard Galv. Stl. cap
Weld middle link of chain to post below cap.
1"(2.54cm)
3/16"(.46875cm) Galv. chain
55 Gal. (209.0l) barrel
5/8"x 4"(1.6125 x 10.16cm) Mach. bolt, weld to end of chain
Drill hole through bolt for padlock.
Weld padlock to end of chain.
4'- 0"(1.22m)
33"(.53m)
1"(2.54cm)
2"(2.08cm)
¼"x 2"x 8"(.625 x 5.08 x 20.32cm) Flat hot rolled stl., curved to fit bottom of barrel. Weld to channel.
¼"x 1"x 2"(.625 x 2.54 x 5.08cm) Stl. channel welded to post.
5"(12.7cm)
Finish grade
1'(.30m)
Concrete
4'- 0"(1.22m)
1'- 0" (.30m)
NOTE:
To lock barrel in place, insert bolt through hole in sleeve, then insert shank of lock through hole in bolt and secure.
All welds shall be chipped and brushed.
Paint all welds and steel with rustoleum, hot galv. or equal.
Drill holes in bottom for drainage.

No-Spill Trash Cans

Many work hours are spent cleaning up garbage from tipped-over trash receptacles.

To save wasted effort and frustration, Rudolph H. Hozak, senior landscape architect with the city of Flint, Michigan, suggests using a 55-gallon (209 l) drum on a locking post.

The locking post was designed for use at rest areas along the Flint River Bikeway after Hozak tried unsuccessfully to find a suitable one commercially made.

A number of the receptacles have been in use for three years, Hozak reports, and they have held up well. The park areas are neater, too.

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Sgt. Paul E. Bolton instructing officer Eugene G. Melanson in the DECAT Program.

DECAT Program Trains Drivers to Conserve Fuel

During the last several years the United States Park Police (USPP) has become keenly aware of the need to conserve energy. USPP's main energy consumer is its fleet of 224 vehicles, which consumes an average of 325,000 gallons (1,235,111 liters) of gasoline per year. Although the nature of law enforcement makes energy conservation difficult, police officers can be trained to drive in an energy-efficient manner.

In July 1979, USPP sent four officers to the Department of Energy's Driver Energy Conservation Awareness Training (DECAT) program for instructors. The DECAT program evolved from a study conducted in 1976 at the department's Nevada test site to evaluate the results of driver training and the use of a vacuum gauge to increase fuel economy. The findings, published in 1978, indicated that this combination reduced fuel consumption 10–15 percent.

Based on these findings, the program was adapted to train instructors from agencies across the country. These instructors, in turn, train others to present the DECAT course. Accordingly, the four USPP officers, upon returning to their respective assignments, began to train their coworkers.

(Continued on p.48)

Energy Saving and Recycling

Grist

A publication of Park Practice
Park Practice is a cooperative effort of the Heritage Conservation and Recreation Service and the National Recreation and Park Association.

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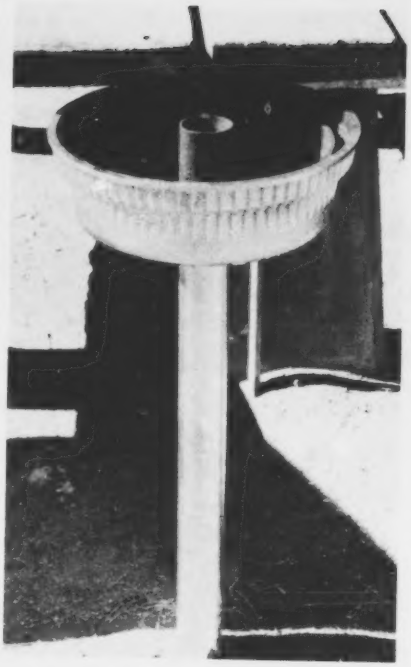
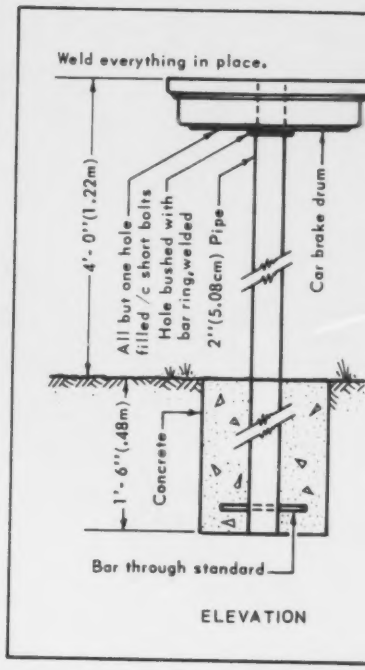




Brake Drums for Charcoal Cookers

Tighter budgets have forced everyone to take a look at available resources. When Glenn Mincks, a ranger at Anza-Borrego Desert State Park in California, looked around, he saw throw-away car brake drums that could be recycled into charcoal stoves for primitive campsites.

Mincks cemented a 48-inch (120 cm) length of 2-inch (5 cm) pipe 18 inches (45 cm) into the ground. Then he welded a brake drum, bushed with re-bar, to the pipe.

The stoves have been used without any problems for more than a year. Even cleanout is simple. A bent coffee can scoop fits inside the brake drum; one sweeping motion scoops the drum clean.

New Use for Service Station Canopy

Through the generosity of the Standard Oil Company and the ingenuity of the North Jeffco Recreation and Parks District, Colorado, an old service station canopy found a new use as a picnic shelter in a neighboring park.

Both the service station and the land on which it stood, valued at $60,000, were donated to the North Jeffco Foundation by Amoco, Standard Oil Company. This gift resulted from diligent negotiations between representatives of Standard Oil and President of the North Jeffco Board of Directors, Gail H. Gilbert.

The service station site, which had not been utilized for several months, stood in the southwest corner of the North Jeffco Park. Staff moved the canopy to nearby Oak Park and placed it over a 30-foot by 60-foot (9 m by 18 m) concrete slab to serve as an all-weather picnic shelter.

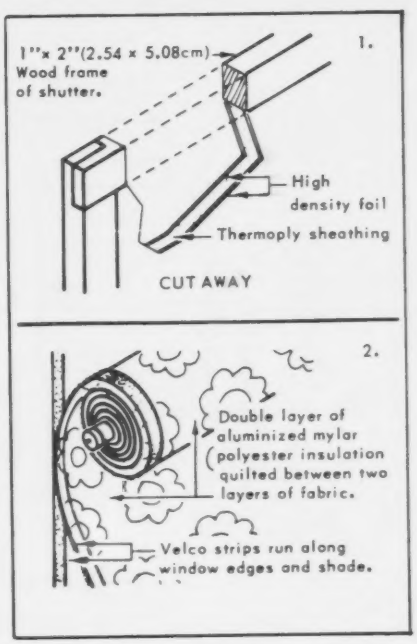
Now the district is remodeling the remaining service station into a workshop for recreational arts and crafts.

Two Ways to Insulate Storm Windows

When the winter winds rattle windowpanes and frost covers the glass, it's time to put technology to work. The glass in windows can lose about 20 percent of the heat in a well-insulated building and up to 35 percent in a poorly insulated one. The R-value of storm windows ranges from a mere R-1.5 to R-2.0.

In an effort to reduce heat escape, Skip Snow, formerly at Mount Rainier National Park in Washington, experimented with several insulating shutter and curtain designs for windows. His simplest design was a lightweight insulating panel with an estimated R-value of 4-6. The panel consisted of a sandwich of Thermopoly sheathing in a 1-inch by 2-inch (2.5 cm by 5 cm) frame between two layers of high-density foil, leaving about 1¼ inches (3.75 cm) of dead air space.

Total construction time was about 20-30 minutes. Installing and removing the panels were simple because the windows were readily accessible. The panels were stored in the house when they were not in use, mostly during the day. Estimated cost of the panels is about 50¢ per square foot (0.09 m^2).


1.
1"x 2"(2.54 x 5.08cm) Wood frame of shutter.
High density foil
Thermoply sheathing
CUT AWAY
2.
Double layer of aluminized mylar (polyester insulation quilted between two layers of fabric.
Velco strips run along window edges and shade.

Snow's second design was an insulating roller shade that quilted a double layer of aluminized mylar polyester insulation between two layers of attractive fabric. Estimated R-value of this design is about 4.3, perhaps even as high as 5. The roller shade design was more complicated and time consuming; it involved both carpentry and sewing skills. However, once made, the roller shade was easier to operate.

To provide a proper thermal barrier, all four sides of the roller shade needed to be sealed. Velcro strips were attached to both the window frame and shade to provide this seal. Estimated cost of the roller shade device is about $1.50 per square foot (.09 m^2).

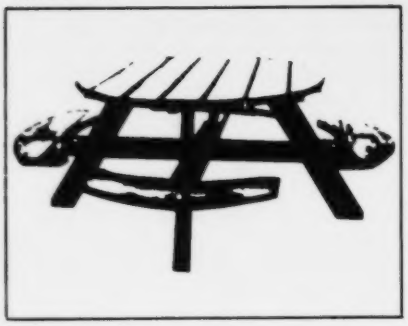
Safety and Security

Warning on Use of Penta-Treated Wood

Our March/April 1980 *Grist* described a handsome picnic table designed by Harry Bennitt of Harmonie State Park, Indiana. In the article, we mentioned that the table was made of penta-treated wood.

Following the publication of this item, Nicolas Veloz, Jr., of Turkey Run Park in McLean, Virginia, alerted us to the danger of using penta-treated wood in places where it might come into contact with food or bare skin. Frequently used as a wood preservative, pentachlorophenol is a highly toxic irritant that can be absorbed through the skin. Our safety experts have confirmed this danger; they recommend using copper-8-Quinolate or something similar on picnic tables instead of pentachlorophenol.

Further information on pentachlorophenol and guidelines for its use can be found in a publication titled *Industrial Hygiene Release for Pentachlorophenol*, published by the Division of Safety and Occupational Health Management of the National Park Service.



Simple T-Bar Barrier

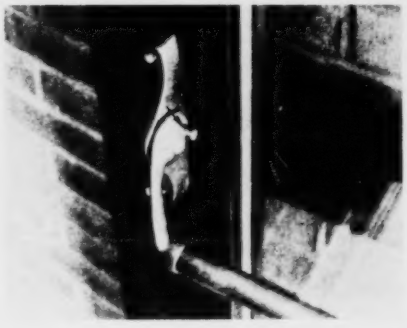
Who says a gate has to be a heavy, expensive item? Not Pennsylvania Power and Light Company.

Clark E. Travelpiece, recreation development assistant, suggests a low-cost, low-maintenance pipe barrier that can be made from salvage materials. Emergency or maintenance vehicles can easily unlock the padlock and remove the T-bar barrier to gain access. Meanwhile, unauthorized traffic is blocked.

Shut Burglars Out

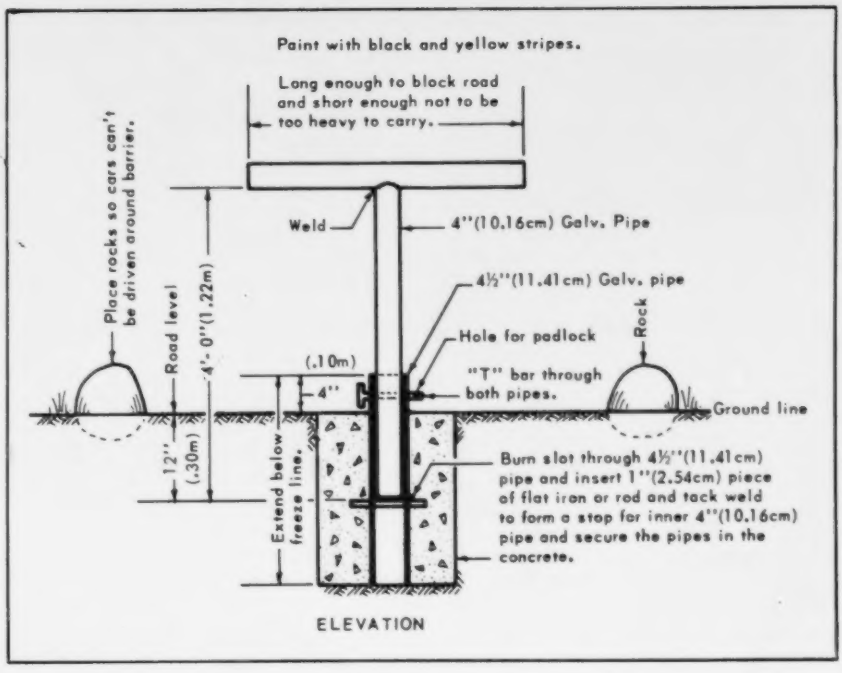
Park personnel at George Rogers Clark National Historical Park, Indiana, hadn't meant to have an open door policy for burglars, but when local police surveyed the park's security, that is virtually what they found.

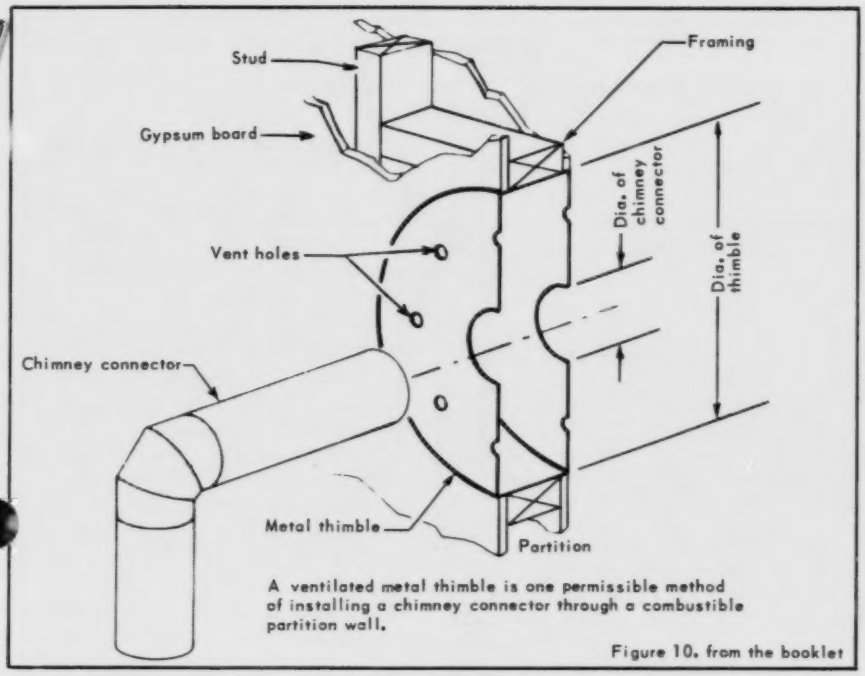
To lock the exit doors of the visitor center at night, personnel adjusted a screw in the push-bar lock release; this made the bar stand out from the door on the inside. However, burglars could take a piece of coat hanger, bend it into a hook, and push it through the crack between the double doors. They could slip the hook over the push-bar and pull it toward the outside to release the lock. With glass doors, the burglars even could see what they were doing.



Maintenance workers Larry Litherlund, Don Hedge, and Dale Miley came up with a better idea. They drilled two matching holes that line up when the push-bar is in locked position. One hole is through the movable bracket of the push-bar at the side of the door, the other is on the unmovable mounting under the bracket. Whoever locks the doors for the night now slips a pin, made from a cut-off 10-penny nail, through the two aligned holes. This prevents the push-bar from being moved until the pin is removed. Yet the door can be opened from the outside with a key.

In no way does this system interfere with the normal daytime use of the safety push-bar release mechanism. It just closes the door on burglars at night.


Paint with black and yellow stripes.
Long enough to block road and short enough not to be too heavy to carry.
Place rocks so cars can't be driven around barrier.
Road level
4'-0"(1.22m)
Weld
4"(10.16cm) Galv. Pipe
4½"(11.41cm) Galv. pipe
Hole for padlock
Rock
(.10m)
4"
"T" bar through both pipes.
Ground line
12" (.30m)
Extend below freeze line.
Burn slot through 4½"(11.41cm) pipe and insert 1"(2.54cm) piece of flat iron or rod and tack weld to form a stop for inner 4"(10.16cm) pipe and secure the pipes in the concrete.
ELEVATION



A ventilated metal thimble is one permissible method of installing a chimney connector through a combustible partition wall.

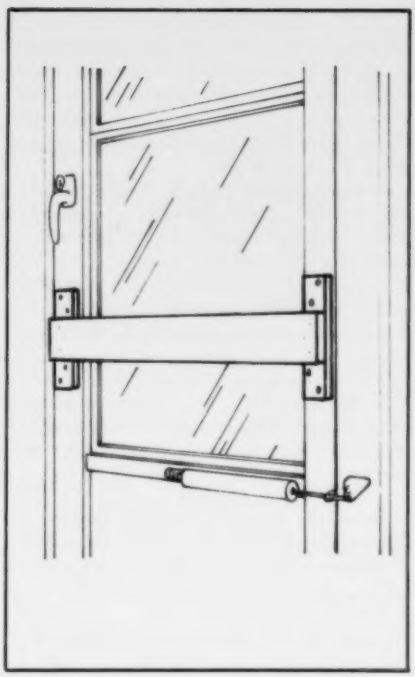
Figure 10. from the booklet

Door Guard

Storm and screen doors are so popular they almost are taken for granted—until someone falls through one. Small children are especially prone to accidents involving storm doors and broken screens.

Ray E. Claycomb, assistant chief park interpretor at Natchez Trace Parkway in Tupelo, Mississippi, considered the problem and came up with an inexpensive, easily installed door guard. In addition to providing extra safety for storm and screen doors, Claycomb's suggestion helps reduce maintenance costs by preventing broken glass and pushed out screens.

The guards are constructed of 1-inch (2.5 cm) thick 4-inch (10 cm) wide wood. Similar units available commercially would cost a minimum of $7 each. The guard does not interfere with height adjustments to the inside glass or with the removal of either the inside glass or the outside screen for maintenance.



New Stove Safety Booklet

Using Coal and Wood Stoves Safely!, published by the National Fire Protection Association, is an excellent resource for recreation areas and parks that use these items.

In clear, succinct language, the booklet covers the selection, installation, use, and maintenance of coal and wood burning equipment. It also discusses chimneys and chimney connectors. In addition, the booklet addresses specific fire hazards associated with solid fuel burning equipment and reports on typical fires to emphasize the points made in the text.

As our energy supply continues to dwindle and as people grow more aware of the need to conserve it, alternate heating and cooking methods become more and more appealing. Yet the safe use of these methods depends upon knowing and avoiding all potential hazards.

Using Coal and Wood Stoves Safely! gives readers a thorough, understandable safety review. The 12-page, illustrated booklet (NFPA no. HS-10), is available from the National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210; price $5.

Prevent Gasoline Theft —Cheaply!

As the price of gasoline goes up, so does the possibility of its theft. Now, Howard A. Jefferies, a horticulturist at Independence National Historical Park in Philadelphia, suggests a sure cure for the theft of gasoline from vehicles. Best of all, this cure is cheap; it costs less than a gallon of gas.

Simply add an antitheft spring to the fill pipe of each vehicle. This prevents siphoning but does not interfere with fillups. And by using this preventive measure rather than adding a locking gas cap, Jefferies notes, you don't have to worry about losing a key.

Maintenance

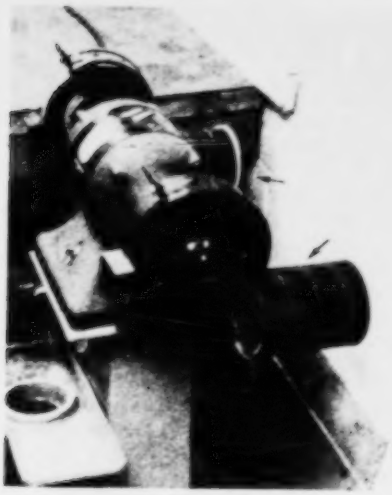
Grit Catcher for Power Grinder

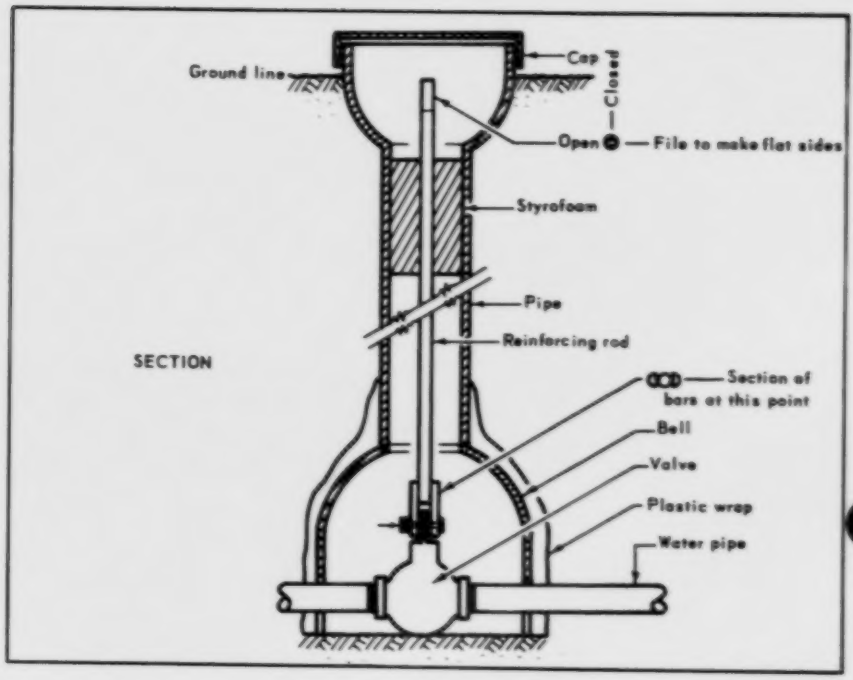
A grit catcher on a power grinder can improve shop housekeeping while also providing a safer environment for workers. Here's an inexpensive catcher designed by maintenance worker Kenneth Dale Miley for use at George Rogers Clark National Historical Park in Indiana.

Miley's shop has a pedestal-mounted power grinder with a stone sharpener disk on one side and a steel bristle wheel on the other. Without a catcher, the grinder throws grit and steel particles out the back, creating a safety hazard and dirtying the wall and floor.

Miley took an empty 2-pound (0.9 kg) coffee can and cut a hole in the bottom to just fit over the discharge chute at the bottom rear of the wheel. He drilled a hole through the top of the discharge chute, then attached the can to the chute tubing with a metal screw to hold the top side of the horizontal can snugly in place. He added a washer to assure a tight fit and prevent grinder vibration from loosening the screw. With this device, the grit that flies out of the grinder now goes into the can.

The plastic lid of the coffee can, placed over the back, open end, keeps the grit and particles inside. This lid can be removed easily to clean out the grit. For a finishing touch, Miley painted the coffee can to match the grinding mounting.





Water Line Valve Modification

Nature has a way of exasperating us while simultaneously providing us with beauty. Parks along the Susquehanna River are a good example of this.

Because the parks are built on a silt soil and the river floods frequently, curb key boxes challenged staff ingenuity when it came time to winterize buildings. The boxes would fill up with silt and workers had to force the long curb key through 2 feet (60 cm) of mud, hoping to hit the valve.

Then Jesse Taylor, park superintendent II in the Susquehanna Complex, came up with a good suggestion that eliminated the problem. His proposed valve modification can be made as the curb key boxes are dug up to remove the silt.

When the curb key box is removed, Taylor suggests cutting off two 1½-inch (3.75 cm) pieces from a reinforcing rod and welding these pieces to each side of the long rod as shown. Drill a hole through the two short pieces of rod and the top of the valve where the curb key rests. Then bolt the rods and the valve top securely with two nuts. Replace the curb key box by slipping it over the reinforcing rod. When the bell is in place over the valve, wrap it in 4-mill plastic, then fill in the hole. If the rod is too long, you can trim it with a torch. Pack the top 8–10 inches (20–25 cm) of bell housing with styrofoam slabs to keep the rod in the center of the pipe. If the cap does not lock, the styrofoam also will keep out debris. With a file, notch the top of the welding rod. Stamp the lid lip with "on" and "off."

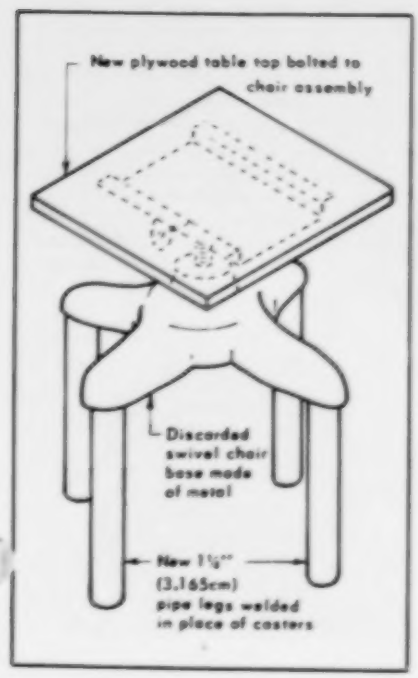
With this modification, it takes less than a minute to shut off the water, whereas before it could take a day just to dig up the valve. Instead of carrying a 6–8 foot (1.8–2.4-m) long curb key, now workers only need a pair of vice grip pliers to turn off the water. And with the notch clearly pointing to "on" or "off," for the quarter-turn valves, no mistakes can be made.

Swivel Chair Speeds Up Painting

A seat-of-the-pants idea saved Cumberland Gap National Historical Park, Kentucky, both work hours and wages. The problem was how to spray paint trash cans efficiently.

Park personnel spent approximately 12 days each year spray painting the trash cans in the park. The job involved spraying and turning each can by hand to ensure an even coat of paint.

Robert A. Higdon, electrician, saw the problem and came up with an idea. He obtained an old swivel office chair and took off the casters and seat. Next he determined the platform height needed by the painter, cut four 1¼" (3.125 cm) pipes to length, and welded them to the chair bottom in place of the casters. Then he bolted a square section of ¾" (1.875 cm) plywood to the assembly where the seat had been.


New plywood table top bolted to chair assembly
Discarded swivel chair base made of metal
New 1½" (3.165cm) pipe legs welded in place of casters

The resulting swivel platform allows the painter to paint all 260 trash cans in two-thirds the time. This is a savings of four work days and $240 in wages.

For his suggestion, Higdon received a $30 National Park Service incentive award.

Trash Can Reflectors

Things that go bump in the night should not include park trash receptacles. But that was the problem foreseen at Natchez Trace Parkway in Tupelo, Mississippi.

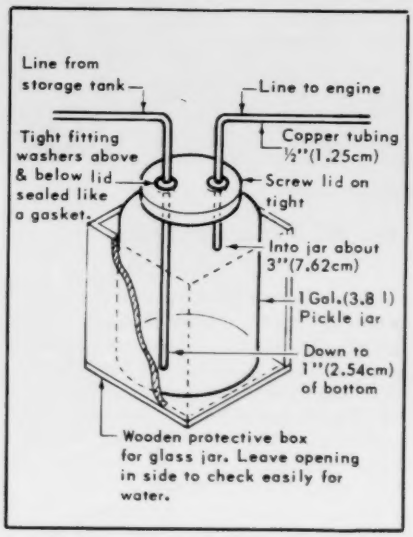
New "drive up" containers were installed next to the roadway so motorists wouldn't have to get out of their car to deposit trash. But, because the receptacles are so near the roadway and are hard to see at night, the receptacles were destined for many bumps and scrapes.

Park technician Steve G. Franks Jr. suggested using strips of yellow reflective tape on each side of the containers facing traffic. By placing one strip along the mouth of each receptacle and one down its side, the container now is clearly visible at night.

Water Trap for Diesel Engines

Water in diesel engine generators poses a serious, costly problem. Condensation that accumulates in fuel tanks can enter the engine and cause it to malfunction. In time, these malfunctions become serious and cost parks thousands of dollars in overhauling and, eventually, replacing the engine.

Paul E. Hicks, a plumber at Gulf Islands National Seashore Park in Mississippi, devised a water trap that can be installed on fuel tanks to prevent condensation build-up. The traps cost less than $10 each. In Gulf Islands alone they saved an estimated $3,940 in one year, based on the use of four generators and past operating history.


Line from storage tank
Line to engine
Tight fitting washers above & below lid sealed like a gasket.
Copper tubing ½"(1.25cm)
Screw lid on tight
Into jar about 3"(7.62cm)
1 Gal.(3.8 l) Pickle jar
Down to 1"(2.54cm) of bottom
Wooden protective box for glass jar. Leave opening in side to check easily for water.

Cleaner Mop Water

Maintenance Worker R. E. Norman at Homestead National Monument, Nebraska, uses a 3-gallon (11.4 l) garden sprayer filled with diluted wax stripper to speed up his floor cleaning chores.

He says it is easier to mop up than the old mop-bucket method because there isn't as much water to pick up with the mop, the water doesn't get as dirty, and it takes less stripper to do the job.

Norman says he has been using the method for several years and he gets a cleaner, better overall job done in less time.

He was presented a $25 National Park Service incentive award for his suggestion.

Storage Hooks

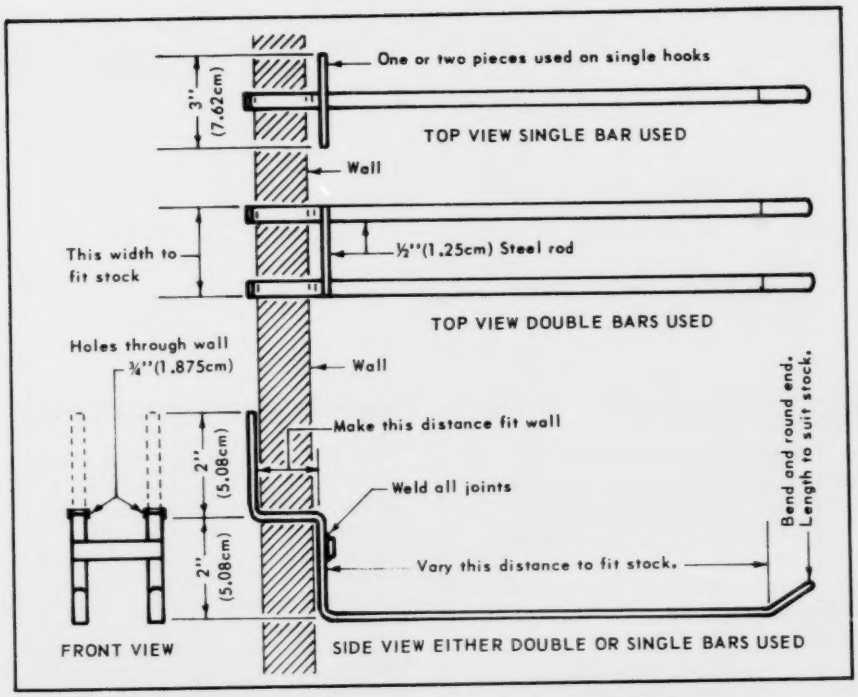
Keeping track of a wide variety of equipment in a limited space is a common problem. At Willow River State Park in Wisconsin, head mechanic Mark Couch arrived at a workable solution by creating special wall hooks that store equipment and allow inventory at a glance.

To make a hook, Couch uses a cutting torch to bend a series of right angles into lengths of ½-inch (1.25 cm) well or steel rod. He makes the first right angle bend about 5 inches (12.5 cm) from the end of the rod. He varies the second length, after the bend, to hold different types of equipment, and makes the third length fit the thickness of the wall. For additional stability in a single rod hook, two 2-inch (5 cm) sections are welded midway between the first and second bends.

To store awkwardly shaped or heavy equipment, two single rod hooks can be joined by a crosspiece cut to fit the specific item to be hung. Weld this crosspiece between the first and second bends.

The hooks are simple to install. First, lay some brown paper on the floor and arrange the items on it as they will be stored. Trace the items, then hold the paper against the wall to see where holes should be drilled. Make the holes slightly larger than the rods you intend to use.

One word of caution: these hooks should not be located where personnel can run into them. Nor should they be used where heavy or sharp items such as axes might cause injury if they fall.



Vacuum Gauge

FloScan

DECAT Program

(Continued from p.41)

Basically, the DECAT course teaches people driving techniques that help conserve fuel. The 2-hour classroom session includes a slide program and a movie, "Running on Empty," both compiled by the Department of Energy. Following this presentation, the students receive behind-the-wheel instruction on how to implement the procedures shown in class.

Three instruments on the training vehicles keep visual and audio track of the operating efficiency and fuel economy of the engine during the practice session. These instruments are:

1) *A vacuum gauge* that enables drivers to observe the way they use the accelerator and shows them how to maintain a high, steady vacuum to achieve maximum fuel economy.

2) *A floScan* that relays the miles per gallon the vehicle is getting during all phases of operation. This gauge includes a totalizer that clicks off the number of gallons consumed in 1/1000-gallon increments.

3) *A tripmaster* that measures distances traveled in 1/100 miles. This is used to compute the exact miles per gallon for the test run.

These three instruments, along with the instructor's narration, let the students compare their normal driving habits with those that can significantly increase fuel economy.

Ultimately all USPP cruisers will be equipped with vacuum gauges so drivers can observe fuel economy. It is hoped use of these devices to practice efficient driving on the job will carry over to efficient driving of personally owned vehicles.

To date, 17 USPP officers, 12 National Park Service employees, and 7 employees from such agencies as the Department of Treasury, Department of Justice, Internal Revenue Service, and Immigration and Naturalization Service have been trained as DECAT instructors. As these instructors train their respective coworkers, eventually more and more employees will learn how to drive efficiently. Already, the DECAT program has been adopted by the entire Department of Treasury.

The USPP emphasizes the efficient use of its vehicles and encourages other law enforcement agencies to consider adopting similar programs. For further information, contact Major George W. Winkel, Commander, Technical Services, U.S. Park Police, 1100 Ohio Drive, SW, Washington, DC 20242.

Tripmaster

Grist
FEEDBACK SHEET

November/December 1980
Volume 24/Number 6

Dear Reader:
We at the Heritage Conservation and Recreation Service are interested in your comments and suggestions about this publication. We have provided this form in order for you to express whatever opinions you have. If you wish to comment, please remove this user evaluation page and fold it so that the HCRS address appears on the outside. After folding, use tape or staples to close. No postage is necessary.

If you've come up with a workable solution to an on-the-job problem, share it with fellow park and recreation practitioners through *GRIST*.

Just send us a full description of your idea and a labeled diagram of any device or product modification involved.

We'd also like a black and white glossy photograph showing the application of your suggestion. This photo should be of good quality and in sharp focus. For best reproduction, we like to receive 8" x 10" photos, but smaller ones can be used if their quality is good.

So pass the word along. *GRIST* wants to hear what's working for you.

1. How is the material in this issue of *GRIST* useful to you or how does it help you solve any specific problems?

2. Which parts of this publication, if any, were difficult to understand or use? How can they be improved?

3. What ideas do you have that you can share with others?